PSYCHE

A JOURNAL OF ENTOMOLOGY

ESTABLISHED IN 1874

VOL. 53 SEPT.–DEC., 1946 NOS. 3–4

CAMBRIDGE ENTOMOLOGICAL CLUB
1874

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PSYCHE is published quarterly, the issue appearing in March, June, September, and December. Subscription price, per year, payable in advance: $3.00 to Subscribers in the United States; Canadian and foreign subscriptions $3.25, payable at par. Single copies, 85 cents.

Cheques and remittances should be addressed to Treasurer, Cambridge Entomological Club, Biological Laboratories, Harvard University, Cambridge, Mass.

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The March–June, 1946, PSYCHE (Vol. 53, Nos. 1–2) was mailed Dec. 16, 1946.

Printed by the Harvard University Printing Office, Cambridge, Mass., U. S. A.

PSYCHE

VOL. 53 SEPT.–DEC., 1946 NOS. 3–4

CONTRIBUTIONS TO OUR KNOWLEDGE OF THE MYLABRIDAE, SEU BRUCHIDAE (COLEOPTERA) WITH ESPECIAL REFERENCE TO THE FAUNA OF NORTHEASTERN AMERICA

BY J. CHESTER BRADLEY
Cornell University

The family name. — I concur with the wish expressed by Bridwell, 1946, that the International Commission may, by suspension of the rules, validate the use of Bruchus and Bruchidae. I am not however aware that they have been requested to do this, and even if they have been — I have quite recently urged Mr. Bridwell to submit the case to them — we can not anticipate a decision prior to its being reached.

Mylabris Geoffroy

Mylabris signaticornis Gyll. in America. — There is a single (previously misdetermined) specimen of this species from the collection of Mr. Charles Liebeck and now contained in the Fall collection in the Museum of Comparative Zoology which bears labels indicating that it was found in lentils in Philadelphia, Pa. This is the fifth species of the genus to be recorded from the United States. It is a species of southern Europe, where it infests lentils and *Vicia monanthos*. One of these five species which has escaped record in the supplements to Leng's Catalogue is *M. lentis* Froelich, recorded in the New York State list of insects as infesting lentils in groceries in Buffalo and Ithaca; this species comes from the Crimea and Caucasus and attacks only lentils. As has been pointed out to me, both of the species are accidental importations of adults that would be unable to establish their progeny in dried lentils, and therefore are under no likelihood of becoming established.

Gibbobruchus Pic

Gibbobruchus mimus (Say) Bridwell, 1946. — Leng's reference of Horn's group II of Bruchus to Pseudopachymerus Pic is not correct. The type of this genus, and of Caryedes Hummel (*brasiliensis* Thunb. or its synonym *faldermanni* Manh.) is not congeneric with *mimus* Say, although showing certain points of relationship. *Mimus* belongs to Gibbobruchus Pic (as has been pointed out by Bridwell '46, p. 54, after these notes were written and submitted to him), and is quite similar to both *speculifer* Gyll. the type and *polycoccus* Fahr. the other originally included species, with both of which I have compared it. The following characters and distinctions may be noted:

Head not elongate, the antennal sockets practically contiguous to the mandibles; antennae not flabellate; pronotum strongly narrowed anteriorly, immarginate, its sides strongly expanding to the acute hind angles, its hind margin with a pronounced median lobe, its surface with a median longitudinal strongly elevated ridge (less strongly elevated in *mimus* than in the other two species) which bears a weak longitudinal median sulcus, and a somewhat stronger transverse, median depression, the lateral depressions as in Caryedes, but correspondingly more pronounced, the enclosed tubercle weaker; hind femora strongly incrassate, their width equal to ½ their length, the inferior surface finely bicarinate, the inner edge with a spine-like tooth near its apical third, followed by 4 acute teeth about ½ as long, not set in a notch, the outer edge denticulate from about its basal third to the apex; hind tibiae as in Caryedes; pygidium nearly vertical, in the ♂ with a large apical glabrous area, (in *polycoccus* this is bituberculate), in the ♀ densely pubescent throughout. This description applies equally to all three species, except as noted.

Caryedes Hum.

Head elongate, the antennal sockets removed from the base of the mandibles by the length of the first antennal segment; antennae not flabellate; pronotum strongly narrowed anteriorly and produced into a short neck, immarginate, its sides strongly expanding to the acute hind angles, its hind margin with five undulations, its surface with a broad, longitudinal, slightly raised area, of uniformly even surface, bordered on each side by a depression which extends to the side and hind angle, but surrounds a well-marked tubercle; hind femora strongly incrassate, their breadth equal to 0.4 of their length, the inferior surface not bicarinate, its inner margin with a long preapical spine-like tooth, preceded by a notch and this in turn by 2 or 3 minute, semi-concealed spines, and followed by another notch bearing 2 blunt denticles; hind tibiae arcuate basally, clavate, ending in a spine that is as long as the tooth of the femur; pygidium, in the ♂, vertical, with most of the apical surface smooth and shiny, not strongly pubescent, and bearing a small median triangular elevation bordered by a narrowly V-shaped groove, in the ♀ densely pubescent and without the elevation.

Another species previously included in Pseudopachymerus is *arizonensis* Schaeffer, but this possesses characters so distinctive that it requires generic separation. I had drawn up and submitted to Mr. Bridwell, for his criticism, a description of such a genus, dedicated to him in recognition of the considerable amount of discriminating work that he has done in this family, but he preferred to name it himself, which is of course his privilege. The description that he published is, however, so brief, that it may not be amiss to publish here the description that I had prepared, along with a key to related genera, some of which are purely Neotropical.

Neltumius Bridwell, 1946

Head short, the antennal sockets very close to the base of the mandibles, antennae reaching approximately to the base of the elytra, gradually thickened from the third segment, with symmetrical segments and therefore not serrate, or with segments slightly produced on the outer side so that they are sub-serrate. Pronotum short, gibbous, tapered anteriorly, immarginate laterally and without lateral teeth, the sides (from a dorsal view) diverging strongly posteriorly to the acute hind angles, the posterior margin with a pronounced median lobe and usually weakly indicated lateral undulation; the surface much as in Gibbobruchus, with a median longitudinal swelling, most sharply differentiated in the type, in which it is crossed medially by a strong transverse depression, that in the other species is barely indicated, there is also a weak longitudinal furrow, more or less accentuated by white scales, the depressions to the sides of the median ridge enclose a weak tubercle, more strongly developed in Gibbobruchus; prosternum triangular between the coxae which are contiguous; elytra short, exposing the pygidium; pygidium moderately inclined to nearly vertical, its apex rounded, its surface even, without grooves or tubercles, densely

pubescent in the ♀, but some individuals, evidently males, wit
an apical thinly pubescent area. Hind femora not incrassate
the width equal to almost ⅓ of the length, the inner surface flat
the under surface somewhat flattened, with a weak carina o
the inner margin that bears a single denticle before the apex
hind tibiae carinate externally, the apex with two equal shor
teeth (one a little longer in *texanus*). Surface of pronotum an
elytra densely covered with appressed pubescence, mottle
white and brown.

This genus seems to be most nearly related to Gibbobruchus

Species

Neltumius arizonensis (Schaeffer), genotype.
Neltumius gibbothorax (Schaeffer), new comb.
Neltumius texanus (Schaeffer), new comb.

Key to genera with longitudinal pronotal elevation.

1. Hind femora incrassate, with a strong inferior preapica
   tooth followed by spines or denticles .... (2
   Hind femora slender, simple except for one small inferio
   tooth or spine (N. Amer.) .... Neltumiu
2. Antennal sockets distant from base of mandibles by th
   length of the first or second antennal segment ..... (3
   Antennal sockets practically contiguous to mandibles. (N
   and S. Amer.) .... Gibbobruchus Pi
3. Pronotal ridge strongly elevated; antennae of male pecti
   nate .... Falsobruchus Pi
   Pronotal ridge broad and barely elevated; antennae no
   pectinate .... Caryedes Humme

Callosobruchus Pic

Recent authors place *chinensis* L. and *maculatus* Fabr. in Cal
losobruchus (Cf. Bridwell '29, p. 40, '32, p. 104, Baeckman
'29, p. 160, and Herford '35, p. 5) a fact which has escaped th
compilers of the third and fourth supplements to Leng's Cata
logue, as has also the fact pointed out by Bridwell that th
correct name for *quadrimaculatus* F. is *maculatus* F.

Megacerus Fahraeus

The species of this genus of which the habits are known infes
the seeds of Convolvulaceae. Bridwell (1929, p. 112) has des

ignated *Bruchus coryphae* Oliv. genotype of the synonymous or possibly subgeneric group Pachybruchus Pic, and has also transferred to Megacerus *B. discoideus* Say, B. *impiger* Horn, and *B. crenatus* Schf.(nec Thunberg) the name of which he has changed to *schaefferianus* Bridw. Since all of these facts, including the recording of Megacerus as a North American genus have escaped the attention of the compilers of the supplements to Leng's Catalogue, they are here repeated.

Megacerus Fahreus 1839 is not entered either in Neave's Nomenclator zoologicus or in the Nomenclator animalium generum et subgenerum of the Prussian Academy of Sciences in Berlin.

Megacerus arenarius (Wolc.) new comb. — I have seen no specimen of *Bruchus arenarius* Wolcott, but since it was described as a member of Horn's group IV, to which the species of Megacerus belong, it also may be transferred to that genus, pending a fuller knowledge of the species. This action is justified by the fact that it certainly is not a Bruchus, that some disposition should be made of it, and that it in all probability is a Megacerus.

Bruchidius Schilsky

The status of this genus has been discussed by Bridwell, 1899, p 41. Reopening the question in 1946, p. 53, he finds it "advisable" to establish a tribe Bruchidiini for the Old World genera and another, Acanthoscelidini for the Nearctic and Neotropical genera. However he considers it "premature to attempt a diagnosis" of these tribes. He states that aedeagal distinctions exist, but not what they are. The present writer hopes to be pardoned if he finds it a somewhat unscientific procedure to erect taxonomic groups until one is prepared to differentiate them, and present the evidence for believing them distinct, in order that others may examine and evaluate it. To him it is premature to recognize, or for their sponsor to have proposed the tribes.

The matter is not without zoogeographical importance for it our Nearctic Bruchidius (for which at least in part Bridwell has erected the genus Sennius) are not offshoots of the European group, but come from a different stock, then the matter is of considerable interest. Nevertheless it remains to be proven.

An adequate differentiation between Bruchidius and Acanthoscelides *s. l.* (probably including all or most of Bridwell's recent segregates of that genus) has been given by Herford, 1935.

Bruchinus Schilsky 1905, cited by Bridwell as a synonym or possible subgenus of Bruchidius, is not recorded either in Neave's Nomenclator or that of the Prussian Academy of Sciences in Berlin.

In erecting the Palearctic genus Sparteus (1946, p. 55) Bridwell has not compared it with Bruchidius, which is the nearest relative of the group to which he intended the name to apply. It does not seem that it can be accorded higher status than that of a subgenus of Bruchidius, at least until adequate reason for so doing is pointed out.

Bridwell designated *villosus* Fabr. type of Sparteus. But Hoffman, 1945, p. 83, indicated that the species which Bridwell really meant, and which has passed as *villosus* Fabr., is *fasciatus* Ol., 1795, Ent., v. 4, p. 20. He pointed out that *villosus* Fabr. is a Spermophagus. Schilsky saw the Fabrician types in Kiel, and found this to be the case. Sparteus Bridwell therefore is a synonym of Spermophagus, unless action is taken by the International Commission on Zoological Nomenclature to change the genotype to the species that Bridwell unquestionably meant.

Dr. W. T. M. Forbes has bred *B. fasciatus* Ol. in numbers from the seeds of Scotch broom (*Cytisus scoparius*) at Woods Hole, Mass. The specimens were determined by Mr. L. J. Bottimer in 1931. This is a common species of southern Europe, not previously recorded from North America, unless record has escaped my attention. Cytisus and Spartium are both cited as hosts, and although these are separate genera, I am unable to state whether or not the terms have been used synonymously in this connection. Four specimens of the same beetle are in the Fall collection, taken on Nantucket Island in 1920, 1926, and 1927, so that the beetle is evidently well established. These specimens are labelled "*cisti* Fabr." but this should be *cisti* Payk., which is a synonym of *fasciatus*.

It is interesting to note that Mr. Bridwell in allocating Sparteus to his tribe Bruchidiini (see above), apparently because it is Palearctic, was obliged to make an exception of it, including it in his key with "Acanthoscelidini."

Stator Bridwell, 1946

Bruchus pruininus Horn has been transferred to Bruchidius by Herford (1935, p. 17) but that fact was overlooked by Blackwelder in compiling the Fourth supplement to Leng's Catalogue. It has now been made type of Stator Bridwell, 1946, p. 55.

Sennius Bridwell, 1946

The following species, described in Bruchus and recorded from the northeastern United States, should be listed in Sennius:

Sennius bivulneratus (Horn) new comb.
Sennius cruentatus (Horn) genotype.
Sennius nigrinus (Horn) new comb.

I have examined the type of each of these species.

Acanthoscelides Schilsky

Bridwell (1929, p. 42) has characterized this genus. One character mentioned by him, namely, the carinate front, is not of generic significance, as already pointed out by Bottimer (1935, p. 129). It had seemed to me that *macrocerus* Horn, and those species related to *flavicornis* Sharp represent two subgeneric segregates, and in the manuscript that I submitted to Mr. Bridwell I had erected such. Mr. Bridwell, perhaps inspired by my attempts to straighten matters out, has gone further, and erected genera not only for these two groups, but for several others that would formerly have fallen under Acanthoscelides. He may be right, but perhaps some of his groups would be more suitable as subgenera, especially Mimosestes, and Algarobius.

The result of this breaking up of Acanthoscelides is to leave our North American fauna disrupted, so far as the generic allocation of species is concerned, and it is necessary to rebuild it.

Bruchus obtectus Say is the genotype of Acanthoscelides (see Bridwell, 1929, p. 42, and 1932, p. 104); this, the economically important beanweevil, originally American, has become cosmopolitan through commerce. Its transfer to Acanthoscelides, and the record of the latter as a valid North American genus escaped the attention of the compilers of the second and third supplements to Leng's Catalogue.

Bottimer has described *A. tenuis* from the eastern United

States (1935, p. 127). This did not escape the attention of the compiler of the fourth supplement, who recorded it as a Bruchus, not an Acanthoscelides. The compiler, as a taxonomist, has a perfect right to consider *tenuis* a Bruchus and Acanthoscelides an invalid genus, but as a cataloguer it seems quite unpardonable for him to record the species in a genus in which it was not described, and to make no mention of the genus in which it was described.

In the same paper, pp. 128 and 129, Bottimer refers the following species to Acanthoscelides, namely: *A. atomus* (Fall), *A. alboscutellatus* (Horn), *A. seminulum* Horn. No record of these transfers appears in the fourth supplement to Leng's Catalogue.

In all probability all species belonging to Horn's groups VI, VII, VIII, and IX, as well as those for which Fall erected the group VIIIA belong to Acanthoscelides, *s. l.*, *i. e.*, as the genus was understood prior to Bridwell's 1946 paper.

List of Species of Acanthoscelides and Segregate Genera Recorded from the Northeastern United States

The numbers preceding the species are those used in Leng's Catalogue, p. 305–306, and indicate the bibliographic references as there given.

Acanthoscelides Schilsky

16203. *A. pectoralis* (Horn) new comb.
16205. *A. floridae* (Horn) new comb. Probably equals 16233, *horni* Pic = *exiguus* Horn
16206. *A. innotatus* (Pic) new comb.
16210. *A. obsoletus* (Say) new comb.
16211. *A. longistilus* (Horn) new comb.
16218. *A. alboscutellatus* (Horn) Bott.
——— *A. tenuis* Bott.
16221. *A. obtectus* (Say).
16227. *A. perforatus* (Horn) new comb.
16231. *A. calvus* (Horn) new comb.
16232. *A. fraterculus* (Horn) new comb.

Althaeus Bridwell, 1946

16222. *A. hibisci* (Oliv.), genotype.

Stylantheus Bridwell, 1946

16240. *S. macrocerus* (Horn), genotype.

Abutiloneus Bridwell, 1946

16243. *A. seminulum* (Horn).
16244. *A. atomus* (Fall).

Abutiloneus Bridwell

The differentiation of Abutiloneus from Sparteus in Bridwell's 1946 key is not entirely satisfactory. *Sparteus villosus* may have a minute angulation on the inner margin of the hind tibiae, as stated by Bridwell but it may also have two denticles, and sometimes apparently none. A specimen in the Fall collection determined as *flavicornis* Sharp from San Diego, Texas, collected by E. A. Schwartz and evidently of the lot referred to by Schaeffer in 1907, has denticles or granulations under the femora, and species that I have considered congeneric have each 2 small equal denticles. Neither does the length of the elytral striae entirely serve, as there is considerable difference among these species in that regard. One can say however of Sparteus that striae 3 and 6 are equally long, approach one another at apex and are much longer than 4 and 5, 6 curving in close to the apex of 5, but than in Abutiloneus this is not the case, though approached in *atomus* Fall.

Merobruchus Bridwell, 1946

Merobruchus major (Fall) new combination. The type of this species shows clearly that it is a Merobruchus.

* * *

In the foregoing paragraphs attention has been drawn to a number of genera and generic transfers that should have been recorded in the supplements to Leng's Catalogue. While the cataloguers cannot be excused for their omission, it is only fair to lay a considerable portion of the blame upon the authors involved, for in many instances the transfers have been made in a way that failed to direct attention to them, or to the fact that North American insects were involved. In one instance generic transfers of North American species were made, and thereby a genus added to the North American fauna in a paper the title of which indicated only that it dealt with the occurrence of a beetle in Hawaii. If authors could train themselves to bear in mind the difficulties encountered by bibliographers and cataloguers, fewer such omissions would occur.

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The subfamilies of the Bruchidae. Proceedings of the Entomological society of Washington, June, 1932. 34:100–106. This paper contains a table to the subfamilies, and a list of genera of each, with indication of the genotypes.

The genera of beetles of the family Bruchidae in America north of Mexico. Journal of the Washington academy of sciences, Febr. 15, 1946. 36:52–57. This paper describes several new genera, proposes new tribes, and contains a key to the genera known to occur in America north of Mexico.

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SOUTHERN PIERIDS IN NEW ENGLAND

It might be worth placing on record, as a feature of the warm autumn of 1946, that not only was *Eurema lisa* Boisd. and Lec. abundant throughout the fall along the railway line near Wellesley, Mass., but that the very rare visitors, *Eurema nicippe* Cramer and *Phœbis sennœ eubule* Poey (one specimen of each), were seen by the author of this note on October 17th in the streets of Cambridge, Mass. — V. Nabokov

SOME FOSSIL DIPTERA FROM FLORISSANT, COLORADO

By A. L. Melander
Riverside, California

Florissant, near Pike's Peak, Colorado, is a minor hamlet as towns go, but it is internationally renowned because of the multitude of Tertiary fossils that have been discovered near by. The small bluffs of laminated shale are being dug open piecemeal, to disclose layer upon layer of reminders of the living things of that region as they existed some twenty million years ago. The shale strata consist of solidified fine volcanic ash, blown out from adjacent volcanoes in Miocene times, with outbursts of poisonous gases to overwhelm the insects and other life of that time. Many of the fossils are perfectly preserved, but the majority of the soft-bodied Diptera are tantalizingly incomplete. Here or there a specimen is discovered with enough of its taxonomic parts in good condition, so that it can be classified as accurately as a pinned recent fly. It is my privilege to announce some remarkable finds in this article.

Silvius merychippi (Cockerell) (Tabanidae)

Allotype, male. I purchased at the Museum at the Florissant fossil beds a beautiful specimen of what is unquestionably the species described by Professor Cockerell as *Tabanus merychippi*. The neuration of both wings is perfect and shows the maculations and course of the veins as originally described for the female. The abdomen, however, is not marked with the obscure median stripe, but is evidently uniformly testaceous. The shape of the first and fourth posterior cells indicate the genus *Silvius* rather than *Tabanus*. The broad yellow body and large size suggests the modern *Silvius gigantulus*, though the wings are like those of *S. pollinosus*. There is no angulation nor spur on the branch of the third vein, the wing, even with the markings, being like Figure 16, page 152, of Curran's Manual of North American Diptera.

Leptogaster prior, n. sp. (Asilidae)

(Plate II, Fig. 1)

Length 12 mm., length of wing 7 mm. Evidently a fuscous species, the comparatively stout abdomen indicating a female. Palpi not preserved; proboscis two-thirds the head-height. Lower part of pleura together with the mesonotum and metanotum darker than the upper pleura. Abdominal tergites darker than their sternites. Legs not annulate, but base of femora paler fuscous, outer part of hind femora and of hind tibia dark; hind tibiae enlarged distally, their pubescence plainly discernible in the specimen. Wings narrow and hyaline, the neuration well preserved, second vein arising before discal cell, fork of third vein arising beyond discal cell and continuing with only slight curve to wing-tip, the anterior side of the discal cell evidently angulate at the fork of the fourth and intercalary veins, fourth posterior cell petiolate.

A single specimen from the R. D. Lacoe collection, accession series number 38131, belonging to the United States National Museum. *Leptogaster* differs from other Asilidae by its slender form, limited chaetotaxy, reduced anal angle of the wing, long claws and vestigial pulvilli. The shape of the second posterior cell is also distinctive, extending over the discal cell and pointed at its proximal end. *Leptogaster* bears much the relation to the other Asilidae that the slender-bodied Systropinae do to the other Bombyliidae. The modern *Systropus* is elongate, nearly bare, long-legged, with anal angle and alulae of the wings reduced, and thus differs markedly from the stout furry bee-flies. Although the extreme in *Systropus* has not been found in the Tertiaries, Professor Cockerell has made known several other of the nearly bare and slender Bombyliidae and has commented on their comparative abundance in early times.

Compared with some thirty recent species of *Leptogaster* in my collection, the Florissant specimen agrees exactly with *flavipes* Loew, in every detail of neuration, coloration and size. *Flavipes* is one of the commonest of the living Leptogasters and is widely distributed from Colorado to the Atlantic seaboard. Were the lives of the two not separated by the millions of years of time I would have placed the fossil with the living species. This is the species mentioned by Professor Cockerell in the Entomologist, 1913, page 214, and by Doctor James in the Journal of Palaentology, 1939, page 42, as occurring, but not described, in the Florissant beds. There is a species of *Leptogaster* described from the Tertiary formation of Kroatia, but *prior* is the first extinct species to be found in America.

Asilus curculionis, n. sp. (Asilidae)
(Plate II, Fig. 2)

Legs rather short, unicolorous, apparently red, tarsi gradually darker toward the tip, with uniform short rather coarse but not crowded dark brown pubescence; front femur with a row of eight long slender black bristles along its flexor edge; front metatarsus comparatively long, its sole with short stiff black bristles. This joint lacks the end, but enough is present to show that it is not of the abbreviated type of *Echthistus*. Middle tibiae with three macrochaetae present on the extensor surface; hind femora with about six bristles below, none visible on the upper side. The inner surface of the hind tibia shows a denser pubescence, as in some modern species. This surface is provided with two stout bristles, a character which among the recent species is almost invariably correlated with a long arista. Unfortunately the head, which would have offered valuable generic characters, is wanting. Wing eleven millimeters long, clear hyaline, showing no darkening at the tip or posterior border, veins firm and dark, fourth vein much arched at basal third of second posterior cell, fourth posterior cell proximally pointed and merely touching the tip of second basal cell, anterior cross-vein placed a little beyond middle of discal cell. Body evidently darker than the legs, its macrochaetae black.

The right wing and the left hind leg are preserved to a remarkable degree. Remains of the thorax, the other wing, and parts of the legs are also visible on the stone, but are torn apart and more obscure. Modern robberflies readily macerate and their members easily dissociate if kept moist after death, and care must be taken if relaxing them lest they fall to pieces. From the neuration the insect is most certainly to be included in the broad genus *Asilus*. Comparison with recent material shows limited but almost exact agreement with several of the species. The neuration of *Asilus* in its broader sense is quite rigid. The smaller genera or subgenera into which *Asilus* has been segregated derive their characters scarcely at all from the wings. Color, character of the vestiture, and particularly the structure of the genitalia are the points used to separate the adjacent subdivisions.

The species evidently closely resembles *Philonicus saxorum* James, but the wing-veins are much darker, the second submarginal cell distally is less bell-shaped, the first posterior cell is less constricted at the middle, and the fourth posterior cell is not pedunculate at its base. I have compared the fossil with over fifty species of the *Asilus* complex before me, which are distributed among fourteen of its twenty subgenera. From some of the groups, *e.g.*, *Asilus* s.str., *Pampomerus*, *Tolmerus*, etc., the fossil can be at once isolated because of the nature of its vestiture and its neuration. Of the species before me it compares most favorably with *Heligmoneura*. The apparently red legs, the nature of their pubescence and bristles, and the hyaline wings are quite like the European *H. flavipes* Meigen. But the fossil shows a difference in having black bristles, longer front metatarsi and more arched second posterior cell. The Florissant specimen is probably a female for the bristles of the front femora are stronger than in the male of *Heligmoneura*, and there is none of the shaggy hairs underneath the front femora.

In size the fossil resembles our common *Tolmerus notatus*, but its bristles are much less evident and its legs are shorter. Although it does not belong to this division of *Asilus* it will be convenient to compare with *notatus*, inasmuch as Professors Cockerell and James have compared other fossil Asilidæ with this wide-spread recent form. The tip of the marginal cell is as in *notatus*, and therefore blunter than in *peritulus* or *amelanchieris*; the second submarginal cell is considerably shorter than in either *notatus* or Cockerell's species; the second posterior cell bulges as in *peritulus*; the anterior crossvein is as in *notatus*, but slightly beyond middle of the discal cell; the fourth posterior cell is as in *notatus* and *amelanchieris*.

The type bears the accession series number 38131, and is from the R. D. Lacoe collection of the National Museum. This beautiful fossil shows intermingled with the parts of the fly the remains of a beetle in part well preserved. From the robust body, strong clavate femora, broadened tarsi and the pitting and squamæ of the legs and body it appears that the beetle is a weevil, similar to *Phymatodes*. It is not unlikely that the *Asilus* was overwhelmed just after securing the weevil as its prey.

Apolysis magister, n. sp. (Bombyliidae)
(Plate II, Fig. 3)

Length 9 mm. A rather stout, apparently bare species whose generic position is indicated by the peculiar antennæ and open discal cell. Proboscis porrect, twice the depth of the head, palpi not preserved nor is the labella. Antennæ short, the first two joints globular, the first a little larger than the second and neither showing any hairs; third joint quadrate and blunt, widening below just before the middle, in length equal to the basal joints combined, bearing a minute style inserted just above the middle of its apex but not in a depression of the joint. Thorax large and domed. Abdomen large, conical, showing eight segments but the tip of the abdomen is not preserved, the individual segments posteriorly with narrow light-colored incisures. From the fulness of the abdomen it would seem that the fossil represents a gravid female. Legs slender, showing no bristles. Wings uniformly hyaline except that the marginal cell is darker; veins of the anterior portion well preserved, those of the hind part of the wing very faint and in part impossible to decipher. Two submarginal cells present, the second acute and long, the third vein forking opposite end of first vein with the branch terminating at wing-tip, third vein straight, anterior crossvein before middle of wing, discal cell open, confluent with the second posterior cell, three posterior cells present, the shape of the anal cell not recognizable. The species does not show a sign of the delicate scattered pubescence characteristic of the modern species.

Holotype and counter type: collected in 1906 by Cockerell, Wheeler and Rohwer, at Station 14 (See Bull. Am. Mus. Nat. Hist., XXIII, Art. IV.) and deposited in the American Museum of Natural History. Both halves of the stone show the fossil. Paratype: from the R. D. Lacoe collection in the National Museum, accession lot number 38575.

I have carefully looked for the posterior crossvein normally at the end of the discal cell, using the binocular microscope with every sort of lighting, without success; nor is there any angulation evident in the fourth and fifth longitudinal veins to indicate a crossvein. The species is therefore to be located in the genus *Apolysis*, which was erected by Loew for a South African species which is pictured in the Dipterenfauna Südafrikas. There are now six more species recorded from South Africa and two palaearctic species from Europe and Siberia. Although up to the time of writing, the genus *Apolysis* has not been recognized as found in America, I have in press for publication in the Annals of the Entomological Society of America a tabulation of nine species, eight of which are new, which occur in Southern and Lower California.[1] The recent American species are small, ranging from 0.75 to 3 mm., hence the name selected for the large Tertiary species, *magister*, Latin, the leader of his tribe.

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[1] Since published in vol. 39, no. 3, pp. 451–495.

DESCRIPTION OF PLATE II

Fig. 1, *Leptogaster prior*, n.sp. (×6) ; 2, *Asilus curculionis*, n.sp. (×4.4) ; 3, *Apolysis magister*, n.sp. (×6)

THE GENOTYPE OF MIMETUS HENTZ

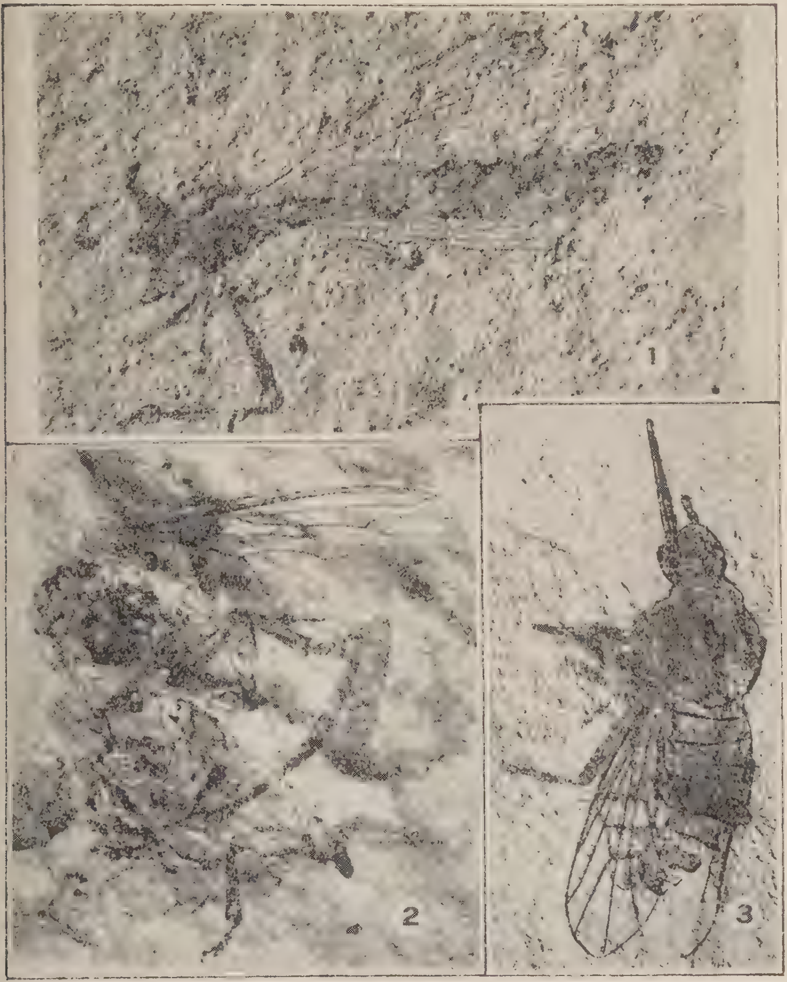
Some time ago, Mr. Banks called my attention to a curious mistake in the selection of the genotype of the genus *Mimetus* Hentz, a well known genus of spiders.

The genus of *Mimetus* was erected by Hentz in 1832, in an article "On North American Spiders" in Silliman's Journ. Sci. Arts, 21, pp. 99–152. The article is reprinted in the collected papers of Hentz in 1875, in the Occ. Pap. Boston Soc. Nat. Hist., vol. 2, pp. 1–15. This is the edition usually used. In the 1832 article, Hentz mentions but one species, *Mimetus syllepsicus* and of this he had only one specimen which he found in the web of *Eperia labyrinthea*.

In the paper of 1850, Journ. Boston Soc. Nat. Hist., pp. 18–35, Hentz redefines the genus and describes three species, *M. interfector*, *M. tuberosus* and *M. syllepsicus*. The first species, *M. interfector*, has been recognized as the genotype and the other two have been considered as synonyms. But by the generally accepted rules of taxonomy, the single species used at the time the genus was defined, automatically becomes the genotype, so if this rule is followed the genotype of *Mimetus* is *syllepsicus* Hentz.

— E. B. BRYANT

PSYCHE, 1946 VOL. 53, PLATE II



MELANDER — FOSSIL DIPTERA

DRAGONFLIES AS PREDATORY ENEMIES OF THE STABLE-FLY (*STOMOXYS CALCITRANS*)

By Charles T. Brues
Biological Laboratories, Harvard University

Two accounts have recently been published [1] of observations showing that dragonflies commonly capture stable-flies in considerable numbers. These relate to Florida Gulf beaches, and recall similar observations made by us some years ago at a second, far distant locality in northern Canada.

This was on the shores of Cedar Lake in northern Manitoba (Lat. 53° N) where we spent a part of the summer of 1936 with the primary purpose of collecting fossil insects contained in Cretaceous amber which occurs in quanity on one of the beaches bordering the western end of the lake.

The ever-present swarms of mosquitoes make the short summer season almost unbearable for man and beast alike and we had been warned that these would be supplemented from time to time by other small biting flies. From the description of this pest given us by the Indian who selected our camp site it appeared probable that it must be the stable-fly.

This surmise proved to be correct. A fortnight later when we returned to camp on the evening of July 5th from the beach where our collecting was done we were assailed by numbers of stable-flies which bit with the persistence that they exhibit whenever abundant, especially in the absence of other mammalian hosts. They were present in considerable numbers while the evening meal was being prepared and eaten, and we resigned ourselves to accepting them as camp mates for some time to come.

On the next evening they appeared in still greater abundance and the outlook grew more unpleasant. Shortly afterward, during the long twilight which persists for several hours at that season, great numbers of dragonflies appeared in the air above the camp and within a few minutes the stable-flies had disappeared. Moreover they did not reappear during the several remaining weeks of our stay at Cedar Lake, although each evening numerous dragonflies were to be seen feeding in the air above us.

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[1] Dove, W. E. and S. W. Simmons. Control of the Stablefly or "dog fly" Breeding in Shore Deposits of Bay Grass. Journ. Econ. Entom., vol. 28, pp. 582–589 (1942).

Wright, M. Dragonflies Predaceous on the Stablefly (*Stomoxys calcitrans*). Florida Entom., vol. 28, pp. 11–13; 31–32.

The dragonflies were not identified, but appeared to be a large species of Æschnidæ which appeared most abundantly at dusk, darting about in such numbers that we could occasionally hear the impact of their bodies as they collided in the air. Midges and mayflies are extremely abundant since there are endless opportunities for them to develop in the lake as well as in the spruce swamps and the other marshy areas characteristic of the region. Dragonflies are likewise a conspicuous element of the insect fauna just as they are along our southern Atlantic and Gulf coasts. The stable-fly population at Cedar Lake, however, cannot compare to the almost incredible numbers which regularly infest our southeastern beaches.

The stable-fly is undoubtedly an old world species, possibly native to India, but was reported to be abundant in Philadelphia as early as 1776, and appears at present to enjoy a distribution about as wide as that of any insect.

POLYDRUSUS SERICEUS SCHALL.

This European species is listed in the Leng list as occurring in Indiana. In 1941 from May 25 to June 22 I took a number of them on poplar and again in Framingham in 1943 they were abundant on *Corylus americana*, poplar and maple near the same locality. This year (1945) they were again abundant especially on *Corylus* about June 10th. The European species of these green weevils are very numerous, or at least the names are, and the present species resembles many of them. Superficially they resemble large *Polydrusus impressifrons* Gyll., *Phyllobius pyri* L. and also the green form of *Scythropus elegans* Coup. *Phyllobius glaucus* Scop. is recorded from "Can." but probably this is a misidentification of *P. pyri* since the specimens from Mr. William Procter taken at Bar Harbor, Me., were first identified as *P. glaucus*. — C. A. FROST

THE TABANIDÆ OF COLOMBIA (DIPTERA)[1]

By Joseph C. Bequaert
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and
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Villavicencio, Colombia

The tabanid fauna of Colombia is rich and extremely varied. In the northwestern part it resembles that of the Republic of Panama, which is now well known through G. B. Fairchild's prolonged investigations. In the northeastern areas it is similar to that of the adjoining districts of Venezuela, a fauna which has recently been listed by A. Stone (1945). The fauna of the southwestern highlands has affinities with that of Ecuador. Finally many of the species of the great Amazonian rain forest extend into the southeastern territories.

At present, however, this vast country has been little investigated entomologically. Our preliminary list of definitely recorded species will probably be more than doubled by future discoveries. Indeed, our only purpose in publishing it is to incite to further collecting. The earliest records of Colombian tabanids by Macquart (1846 to 1855) were indefinite as to locality and some of his species are at present unrecognized. Schiner (1868), v. Röder (1886), and Ricardo (1902) added a few species. In recent years, Enderlein (1925), Szilády (1926), Dunn (1929), Kröber (1925 to 1940), and Antunes (1937) made more important additions.

The present enumeration includes all species recorded thus far from Colombia; but we have clearly indicated which of these we have not seen.[2] The asterisk, on the other hand, indicates the species of which we have studied specimens taken in Colombia. Material was seen from the Museum of Comparative

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[1] Published with a grant from the Museum of Comparative Zoology at Harvard College.

[2] Entomologists should be warned not to trust always the locality record "Bogotá" so common in the literature. Often it means merely that the specimens were shipped from Bogotá to Europe, although they may have been collected in some other section of Colombia.

Zoölogy, the United States National Museum (through Dr. A. Stone), the Academy of Natural Sciences of Philadelphia (through Mr. E. T. Cresson, Jr.), and the American Museum of Natural History (through Dr. C. H. Curran). Much of it was of our collecting; the remainder being obtained by J. V. Acuña, P. Allen, W. A. Archer, D. Augustine, M. Bates, J. Boshell M., M. A. Carriker, E. H. Chapin, H. Daniel, P. Darlington, J. H. Egbert, G. B. Fairchild, F. L. Gallego, A. Gast, C. C. Gowdey, B. Guevara Amórtaqui, W. H. W. Komp, B. Losada S., W. M. Mann, E. and H. Osorno, F. Otoya, L. Patiño-Camargo, Rómulo Patiño, G. Salt, H. F. Schwarz, H. Viereck, and N. Weber. We are indebted to Dr. Graham Fairchild for many favors, particularly for assistance in the case of certain critical species. Some of the specimens here listed were included in his papers on the Panamanian fauna (1939 to 1943); others were mentioned in the senior author's publications on the Tabanidæ of the Antilles and Trinidad (1940 to 1944).

The localities are grouped into the major political divisions (Departments and Intendencias), which are enumerated in alphabetical sequence.

KEY TO GENERA

1. Hind tibiæ with apical spurs. Subcosta always bare both above and below. Labella always with shiny sclerotized plates. Subepaulet bare, without macrotrichia. Subfamily *Pangoniinæ* .... 2.

   Hind tibiæ without apical spurs. Subcosta generally hairy, at least with some hairs beneath. Subfamily *Tabaninæ* .... 9.

2. First two antennal segments elongate, together often as long as or longer than third. Third antennal segment consisting of a long basal part (which sometimes shows superficial rings) and four terminal annuli. Proboscis short, seldom exceeding the height of the head .... *Chrysops.*

   First two antennal segments short, seldom equalling together half the length of the third. Third antennal segment consisting of five to eight divisions. Proboscis often elongate .... 3.

3. Third antennal segment consisting of a long basal part and four terminal annuli. Proboscis short. Wings

extensively blackish. Eyes bare. All posterior cells open .... *Hemichrysops.*

Third antennal segment consisting of seven or eight divisions .... 4.

4. Eyes bare. Face not produced nor snout-like. Proboscis moderately long. First posterior cell closed. Fork of third longitudinal vein generally with an appendix .... *Esenbeckia.*

Eyes hairy. Face more or less produced and snout-like. Proboscis often very long .... 5.

5. Third antennal segment of seven divisions, the first six bearing long finger-like processes .... 6.

Third antennal segment without finger-like processes 7.

6. First divisions of third antennal segment bearing processes only on the dorsal side; basal process longer than the others .... *Elaphella.*

First divisions of third antennal segment with processes on both the dorsal and ventral sides; processes all about equally long .... *Pityocera.*

7. First and fourth posterior cells closed and petiolate. Wings often with dark markings .... *Scione.*

First posterior cell closed or narrowly open, the fourth always open. Wings hyaline or smoky, never with prominent markings .... 8.

8. Coxæ and femora slightly pilose or nearly bare *Fidena.*

Coxæ and femora densely covered with long hairs *Melpia.*

9. First antennal segment more or less elongate, not less than one-fourth of the length of the third segment. Subepaulet bare, without macrotrichia. Body without green metallic scales .... 10.

First antennal segment short, about as long as thick; if longer, the body bears some green metallic scales. Abdomen broad and short .... 11.

10. Abdomen broad and short. Third antennal segment slender, never with a basal process or tooth, at most somewhat widened or slightly produced near the base .... *Diachlorus.*

Abdomen slender, narrow and long. Third antennal segment with or without a tooth or finger-shaped process near the base .... *Acanthocera.*

11. First antennal segment greatly inflated. Palpi very slender. Subepaulet bare, without macrotrichia. Upper branch of third vein turned abruptly forward, joining the costa closer to the second vein than to the wing apex. Face much swollen at insertion of antennæ . . . . *Bolbodimyia.*

First antennal segment not inflated, normal . . . . . . 12.

12. Base of third antennal segment with a long, slender, usually finger-shaped process reaching close to or even beyond the first terminal annulus . . . . 13.

Base of third antennal segment with or without dorsal angle or with a broad tooth which extends at most midway to the base of the first terminal annulus . . . . 16.

13. Subepaulet completely covered with macrotrichia. Fore tibiæ not inflated. Eyes bare . . . . *Alliomma.*

Subepaulet either bare or rarely with a few macrotrichia over a small area only . . . . 14.

14. Body very stout, often densely hairy. At least fore tibiæ inflated, often strongly so; hind tibiæ densely fringed with long hairs. Eyes bare . . . . *Stibasoma.*

Body not especially stout nor hairy. Tibiæ not appreciably inflated, at most with a few scattered long hairs . . . . 15.

15. Eyes pilose or pubescent in both sexes, the hairs sometimes short, scattered and easily overlooked. Labella small and compact, without shiny, sclerotized areas . . . . *Dasychela.*

Eyes bare in both sexes. Labella more or less sclerotized and shiny . . . . *Dichelacera.*

16. All tibiæ strongly inflated . . . . 17.

Tibiæ normal. Palpi dull and hairy . . . . 19.

17. Palpi normal, dull, hairy. Subcallus dull, pollinose. Basal division of third antennal segment scarcely longer than terminal annuli, with a strong, broad tooth. Subepaulet covered with macrotrichia . *Stigmatophthalmus.*

Palpi flattened, shiny, bare. Subcallus denuded, shiny 18.

18. Third antennal segment with basal division long and wide, nearly four times as long as terminal annuli, provided with a very short, broad tooth. Subepaulet covered with macrotrichia. Body without metallic green scales . . . . *Selasoma.*

Third antennal segment with basal portion narrow, without tooth. Subepaulet bare, without macrotrichia. Body with some metallic green scales ...... *Lepiselaga*.

19. Subepaulet bare, without macrotrichia, rarely with a few macrotrichia either restricted to a small area or much more scattered than on the base of the costa .. 20.

Subepaulet wholly covered with appressed macrotrichia, like the base of the costa. Frontal callus present. Labella fleshy, without shiny, sclerotized areas ..... 25.

20. No frontal callus. Labella short, with sclerotized, smooth and shiny areas. Body green or greenish in life .... *Chlorotabanus*.

Frontal callus present .... 21.

21. Third antennal segment of four divisions (only three well-marked annuli). Frons very broad; callus transverse, swollen, narrower than frons. Vertex of female with a small shiny area. Face with two deep, shiny pits .... *Brachytabanus*.

Third antennal segment of five divisions (four terminal annuli); if some are partly fused, either frontal callus as wide as frons, or vertex of female without shiny area, or face without deep, shiny pits .... 22.

22. Eyes pilose or pubescent in both sexes. Frons relatively wide, less than five times as high as wide, with a broad callus .... *Agelanius*.

Eyes bare in both sexes .... 23.

23. Vertex of female with a well-marked tubercle. Frons relatively narrow, at least five times as high as wide, with elongate callus. Labella fleshy or membranous, without shiny, sclerotized areas .. . *Stenotabanus*.

Vertex of female without tubercle, rarely with a small flat, denuded area; in doubtful cases, frons much broader .... 24.

24. Body unicolorous, more or less greenish or pale yellow in life. Frontal callus elongate. Labella with sclerotized, shiny areas .... *Cryptotylus*.

Body not greenish, usually with contrasting markings. Frontal callus as a rule wider than high and as wide as frons. Labella fleshy or membranous, without shiny, sclerotized areas .. *Phæotabanus*.

25. Vertex of female with a more or less prominent, denuded tubercle, sometimes with traces of ocelli. Eyes bare or pilose .... 26.

Vertex of female without tubercle, flat. Eyes of female bare, of male either bare or pilose .... *Tabanus*.

26. Vertex with at least traces of ocelli. Eyes in both sexes bare, unicolorous. Frons rather narrow. Scutellum covered with white or yellowish hairs ..... *Leucotabanus*.

Vertex without even traces of ocelli. Eyes in both sexes pilose, pubescent or with a few scattered hairs; in life often with color bands in the female. Frons relatively broad .... *Hybomitra*.

*1. **Chrysops variegata** (Degeer). Synonyms: *Tabanus variegatus* Degeer, 1776; *Tabanus costatus* Fabricius, 1794; *Chrysops subfascipennis* Macquart, 1855.

Antioquia: near Medellín (N. Weber; also reported by Dunn, 1929); Porcecito, Río Porce (N. Weber). — Magdalena: Tucurinca (reported by Curran, 1928). — Meta: El Caibe (reported by Antunes, 1937); Villavicencio (J. Bequaert). — Putumayo: Puerto Limón (S. Renjifo); Mocoa (S. Renjifo). — Santander Sur: Puerto Olaya (J. Bequaert). — Valle del Cauca: Palmira (B. Losada S.); Hacienda La Carmelita, Río Frío (S. Renjifo). — Vaupés: between San José del Guaviare and Calamar (A. Gast. — Determined by G. Fairchild). — Ad. Lutz (1909) and Kröber (1925) reported this species from Colombia, without definite locality, as *C. costatus* and *C. costatus* var. *subfascipennis*.

*2*a*. **Chrysops læta** Fabricius, 1805.

Amazonas: El Encanto (recorded by Kröber, 1925). — Antioquia: near Medellín (N. Weber); Porcecito, Río Porce (N. Weber). — Caquetá: Florencia (Rómulo Patiño). — Chocó: Andagoya (F. Otoya. — Determined by G. Fairchild); Utría (J. Boshell. — Determined by G. Fairchild). — Meta: El Caibe (reported by Antunes, 1937); Restrepo (J. Bequaert); Villavicencio (M. Bates; J. Bequaert). — Putumayo: Puerto Limón (S. Renjifo). — Valle del Cauca: Sonso (S. Renjifo); Hacienda El Tablazo, Tuluá (S. Renjifo). — Kröber (1925) records *C. læta* also from Bogotá, but this locality is probably erroneous.

2*b*. **Chrysops læta var. nigroviolacea** Kröber, 1925.

Amazonas: Río Igara-Paraná (reported by Pechuman, 1937). — Not seen by us from Colombia.

*3. **Chrysops leucospila** Wiedemann, 1828.

Boyacá: Muzo (J. Bequaert). — Meta: El Caibe (reported by Antunes, 1937); Villavicencio (M. Bates. — Determined by

G. Fairchild). — Vaupés: between San José del Guaviare and Calamar (A. Gast. — Determined by G. Fairchild). — First recorded from Colombia, without definite locality by Schiner (1868).

*4. **Chrysops calogaster** Schiner, 1868.

Boyacá: Muzo (J. Bequaert). — Chocó: El Valle, Utría (J. Boshell. — Determined by G. Fairchild). — Cundimarca: Villeta (J. Bequaert). — Meta: Restrepo (J. Bequaert).

*5. **Chrysops soror** Kröber, 1925.

Boyacá: Muzo (J. Bequaert).

6. **Chrysops melæna** Hine, 1925.

Santander Sur: Jazmín (reported by Dunn, 1929). — Not seen by us from Colombia.

7. **Chrysops incisa** Macquart, 1845.

Originally described from the temperate regions of New Grenada, which may have meant Colombia, this species has not yet been properly recognized; but possibly *C. auroguttata* Kröber is a synonym. — Not seen by us from Colombia.

8. **Chrysops auroguttata** Kröber, 1930.

One of the type specimens of this species was from Colombia, without definite locality. It may, however, be a synonym of *C. incisa* Macquart. Most probably the specimen, supposedly from Bogotá, which Kröber recorded in 1925 as *C. incisa*, was what he later described as *C. auroguttata*. — Not seen by us from Colombia.

*9. **Chrysops renjifoi** J. Bequaert, 1946.

Valle del Cauca: Veneral, Río Yurumanguí (S. Renjifo), holotype and paratype of the species.

*10. **Chrysops weberi** J. Bequaert, 1946.

Vaupés: Mitú (P. Allen), paratype of the species. The holotype is from British Guiana.

*11. **Chrysops chiriquensis** Fairchild, 1939.

Magdalena: Cincinnati, Santa Marta region, one male (W. M. Mann. — U.S.N.M.).

This appears to be the undescribed male of *C. chiriquensis*, a species known thus far only from Panama. It agrees with the female in many characters, particularly in the shape of the antennæ and the presence of a median pollinose stripe on the fronto-clypeus (over the basal or upper half). The wing markings are similar also, but the basal cells are much more extensively black. The abdominal pattern is the same, but the yellow markings are slightly smaller. Length, 7 mm., of wing 7.5 mm. The fronto-clypeus is much swollen and divided by a deep median saddle.

12. **Hemichrysops fascipennis** Kröber, 1930.

The type specimen was from Colombia, without more definite locality. — Not seen by us.

*13. **Esenbeckia chagresensis** Fairchild, 1942.

Magdalena: Río Frío (G. Salt), one of the paratypes of the species.

*14. **Esenbeckia diaphana** (Schiner). Synonym: *Pangonia diaphana* Schiner, 1868.

Meta: Restrepo (J. Bequaert). — Putumayo: Puerto Limón (S. Renjifo); Urcusique (S. Renjifo); San Pedro (S. Renjifo). — Originally described from Colombia, without definite locality.

*15. **Esenbeckia translucens** (Macquart). Synonym: *Pangonia translucens* Macquart, 1846.

Boyacá: Muzo (J. Bequaert).

*16. **Esenbeckia prasiniventris** (Macquart). Synonyms: *Pangonia prasiniventris* Macquart, 1846; *Pangonia semiviridis* Ricardo, 1900.

Cundinamarca: Bogotá (B. Guevara A.). — Magdalena: Río Frío (G. Salt); Agua Dulce, San Lorenzo Mts. (M. A. Carriker). — Originally described from Colombia, without definite locality. Kröber's (1932*c*) locality La Guayra is in Venezuela, not Colombia.

17. **Esenbeckia tinctipennis** Kröber, 1931*d*.

Chocó: Condoto, type locality of the species. — Not seen by us.

18. **Esenbeckia subvaria** (Walker). Synonym: *Tabanus subvarius* Walker, 1848.

Kröber (1932*c*) described the male of this species from Colombia, without definite locality. — Not seen by us.

19. **Esenbeckia arcuata** (Williston). Synonym: *Pangonia arcuata* Williston, 1895.

Kröber (1932*c*) records a female of this species from Colombia, without definite locality. — Not seen by us from Colombia.

*20. **Esenbeckia illota** var. **osornoi** Fairchild, 1942.

Cundinamarca: Medina (J. V. Acuña). — Meta: Restrepo (J. Bequaert), paratype of the variety. — Santander Sur: Río Negro (J. V. Acuña).

Pangonia ferruginea Macquart, 1838 (not of Meigen, 1804), appears to be a synonym of one of the subspecies of *E. illota* Williston. Kröber's (1932*c*) *ferruginea*, from Venezuela, and Antunes' (1937) from Restrepo, were *E. illota* var. *osornoi*. Fairchild (1942) also records a specimen of the same form from Cristalina, Colombia (in Hine coll.), a locality unknown to us.

*21. **Esenbeckia testaceiventris** (Macquart). Synonyms: *Pangonia testaceiventris* Macquart, 1848; *Esenbeckia sexmaculata* Enderlein, 1925.

Cundinamarca: Tapias Las Cruces, Bogotá, one of the types of *E. sexmaculata*. — Meta: Restrepo (J. Bequaert).

In addition we have seen a possibly undescribed species of *Esenbeckia* from Valle del Cauca: La Carmelita, Río Frío (S. Renjifo).

*22. **Elaphella cervus** (Wiedemann). Synonym: *Pangonia cervus* Wiedemann, 1828.

Meta: Restrepo (J. Bequaert); Villavicencio (M. Bates. — Determined by G. Fairchild). — Putumayo: La Tagua Rómulo Patiño).

Pityocera festæ Giglio-Tos is fairly common in the Republic of Panama, but has not yet been taken in Colombia. As the type locality is in Darién, it may be expected to occur in Chocó.

*23. **Fidena gracilis** (Kröber). Synonym: *Melpia gracilis* Kröber, 1930*g*.

Meta: Restrepo (J. Bequaert); Villavicencio (M. Bates). — Nariño: Pasto (B. Guevara A.). — Originally described from Chiriqui, which is in Panama, not Colombia.

*24. **Fidena pubescens** (Ad. Lutz). Synonym: *Erephopsis pubescens* Ad. Lutz, 1909.

Putumayo: Puerto Asís (S. Renjifo).

25. **Fidena pyrausta** (Osten Sacken). Synonyms: *Pangonia pyrausta* Osten Sacken, 1886; *Melpia auricauda* Enderlein, 1925, according to Fairchild, 1941.

Boyacá: Muzo (type locality of *auricauda*). — Enderlein seemingly records his *auricauda* also from Bogotá, but this is probably erroneous. Kröber (1930*g*) referred two females from the Magdalena River, Colombia, to *pyrausta*. — Not seen by us from Colombia.

26. **Fidena nigricorpus** Kröber, 1934. Synonym: *Melpia nigricans* Kröber, 1930*g*; not *Erephopsis nigricans* Ad. Lutz, 1909, now placed in *Melpia*.

Kröber's types of his *M. nigricans* came from Colombia (without definite locality) and Brazil. — Not seen by us.

27. **Fidena auribarba** (Enderlein). Synonym: *Melpia auribarba* Enderlein, 1925.

Enderlein described this species originally from Colombia, without definite locality ("Cordillera, tierra caliente"). He also described a *F. auribarba* var. *albibarba* (Enderlein, 1925) from Colombia ("Cordillera, tierra caliente"). — Not seen by us.

*28. **Fidena aureopygia** Kröber, 1931*a*.

Chocó: Opogodó, type locality of the species. — Valle del Cauca: Ají, Río Naya (S. Renjifo).

29. **Fidena fulvosericea** Kröber, 1931*a*.

This species was described from "Darién, Colombia." The region known as Darién borders on the Gulf of Urabá and extends more in the present territory of Colombia than in the Republic of Panama. — Not seen by us.

Kröber (1930*c*) records as *Sackenimyia analis* (Fabricius) two females from Colombia ("Cordillera, tierra caliente"). It is impossible to decide to which genus they may have belonged. The identity of Fabricius' *Pangonia analis* (1805) is not settled. What Ad. Lutz referred (doubtfully) to *analis* was a species of *Melpia* (=*Bombylopsis* Ad. Lutz), a genus not definitely known from Colombia.

Kröber (1933*a*) also mentions having seen a female of *Fidena sorbens* (Wiedemann), at the Berlin Museum, labelled as from the Cordillera of Colombia. He doubts, however, the correctness of the locality, which we feel is certainly erroneous. It is most unlikely that this species from southern Brazil and Paraguay would occur in Colombia.

30. **Fidena columbiensis** (Kröber). Synonym: *Melpia columbiensis* Kröber, 1930*g*.

Chocó: Condoto ("Upper Condosa" is no doubt a misspelling of Río Condoto, as "Condota" was of Condoto), type locality of the species. — Not seen by us.

In addition we have seen from Colombia specimens of four species of *Fidena* thus far unrecognized from the descriptions. Some of these may be new.

*31. **Scione aurulans** (Wiedemann). Synonyms: *Pangonia aurulans* Wiedemann, 1830; *Scione lurida* Enderlein, 1925.

Magdalena: Vista Nieve, San Lorenzo Mts. (M. A. Carriker); Cerro Quemado, San Lorenzo Mts. (M. C. Carriker). — One of the types of *Scione lurida* was from Colombia, without definite locality.

*32. **Scione albifasciata** (Macquart). Synonym: *Pangonia albifasciata* Macquart, 1846.

Chocó: La Unión (W. A. Archer). — Magdalena: San Lorenzo Mts. (M. A. Carriker); northwestern Sierra Nevada de Santa Marta (P. Darlington). — Originally described from "New Grenada," which may have meant Colombia.

S. albifasciata is about the size of *S. distincta*, from which it differs mainly in the russet femora; the inner orbits of the female converge slightly toward the vertex.

*33. **Scione distincta** (Schiner). Synonym: *Diclisa distincta* Schiner, 1868.

Cundinamarca: Medina, Upper Río Guacavía (J. V. Acuña). — Putumayo: Upper Río Putumayo (B. Guevara A.). — Kröber (1930*h*) reported this species from Colombia, without definite locality.

Smaller than *S. maculipennis* and with blackish femora, the inner orbits of the female decidedly converging toward the vertex; the divisions of the third antennal segment are not swollen.

*34. **Scione maculipennis** (Schiner). Synonym: *Diclisa maculipennis* Schiner, 1868.

Chocó: La Unión (W. A. Archer). — Meta: Restrepo (J. Bequaert); Villavicencio (M. Bates. — Determined by G. Fairchild).

Kröber's (1930*h*) locality Guayaquil is in Ecuador, not Colombia. v. Röder (1886) recorded *S. maculipennis* from "Cerro Munchigne," Colombia, a locality unknown to us; and Ricardo (1902) reported it from Bogotá. It is not possible to refer these two records to one of the foregoing three species, which are so closely allied that Fairchild (1942) regarded them all as one and the same. We believe, however, that they are distinct. *S. maculipennis* is larger than the other two, with russet femora, the divisions of the third antennal segment slightly swollen and somewhat bead-like, the wing markings better defined (the pale areas being decidedly yellowish), and the frons of the female nearly parallel-sided.

35. **Scione nigripes** (Kröber). Synonym: *Rhinotriclista nigripes* Kröber, 1930.

This species, originally described from "New Grenada," without definite locality, may have come from somewhere in Colombia. — Not seen by us.

36. **Scione obscurefemorata** Kröber, 1930*h*.

This species was originally described from Colombia, without definite locality ("Cordillera, tierra templada"). — Not seen by us.

37. **Scione rufescens** (Ricardo). Synonym: *Erephrosis rufescens* Ricardo, 1900.

Kröber (1930*h*) reported this species from Bogotá, Cundinamarca. — Not seen by us.

*38. **Scione minor** (Macquart). Synonyms: *Pangonia minor* Macquart, 1847; *Scione aurea* Szilády, 1926.

Cundinamarca: Bosque Calderón, Bogotá (J. Bequaert); Monserrate, Bogotá (E. Osorno); Arrayan (E. Osorno); Bogotá (B. Guevara A.). — Meta: without more definite locality (B. Guevara A.). — Putumayo: Upper Río Putumayo (B. Guevara A.).

Macquart's *Pangonia incompleta* of 1850, from Colombia may have been this species, rather than his earlier *P. incompleta* of 1845.

*39. **Scione punctata** Szilády, 1926. Synonym: *Rhinotriclista flavescens* Enderlein, 1930.

Magdalena: Sierra San Lorenzo (J. Ujhelyi, recorded by Szilády, 1926), the type locality; Vista Nieve, San Lorenzo Mountains (H. L. Viereck). — Kröber (1930*h*) reported *R. flavescens* from Colombia ("Cordillera"), without definite locality.

*40. **Scione rufipes** (Kröber). Synonym: *Rhinotriclista rufipes* Kröber, 1940.

Meta: Restrepo (J. Bequaert).

41. **Scione minuta** Szilády, 1926.

Magdalena: Sierra San Lorenzo, the type locality. — Not seen by us.

42. **Scione incompleta** (Macquart). Synonym: *Pangonia incompleta* Macquart, 1845.

Originally described from Colombia (♂ ♀), without more definite locality. Not seen by us.

In addition we have seen from Colombia specimens of two species of *Scione*, as yet unrecognized.

*43. **Lepiselaga crassipes** (Fabricius). Synonyms: *Hæmatopota crassipes* Fabricius, 1805; *Lepiselaga recta* Loew, 1869; *Tabanus lepidotus* Wiedemann, 1828. — The spelling *Lepidoselaga* Osten Sacken, 1876, is a superfluous emendation of *Lepiselaga* Macquart, 1838.

Caldas: La Dorada, Magdalena River (recorded by Dunn, 1929). — Chocó: Sautatá, Río Atrato (S. Renjifo). — Meta: Hacienda Yacuana near Villavicencio (E. Osorno). — Nariño: Río Patía (recorded by Dunn, 1929). — Santander Sur: Puerto Olaya (J. Bequaert); Barrancabermeja (J. V. Acuña). — Valle del Cauca: Puerto Merizalde, Río Naya (S. Renjifo); Cali, 3,260 ft. (Severo Quintero; E. I. Huntington; H. F. Schwarz). — The type locality of *L. recta* was New Grenada, which may have meant Colombia. We have seen Loew's types of *L. recta* at the Mus. Comp. Zoöl.

*44. **Stibasoma fulvohirtum** (Wiedemann). Synonyms: *Tabanus fulvohirtus* Wiedemann, 1828; *Tabanus compactus* Walker, 1854.

Boyacá: Guaguaquí (S. Renjifo). — Meta: Villavicencio (M. Bates). — First recorded from Colombia, without definite locality, by Schiner (1868).

45. **Stibasoma chionostigma** (Osten Sacken). Synonyms: *Tabanus chionostigma* Osten Sacken, 1886; *Stibasoma pachycephalum* Bigot, 1892; *Stibasoma flavistigma* Hine, 1912.

Valle del Cauca: Buenaventura (recorded by Kröber, 1932, as *S. flavistigma*. Also collected by Rodriguez in August, 1942, according to G. Fairchild's identification). — Not seen by us from Colombia.

46. **Stigmatophthalmus lutzi** Surcouf, 1921, Gen. Insect., Tabanidæ, p. 54; 1923, Ann. Soc. Ent. France, XCI, (for 1922), pt. 3, p. 242 (♀).

This species was described from Santa Fé de Bogotá, first very briefly in 1921 and later (1923) more in detail. We have not seen it; but from the descriptions it appears to be extremely close to, or possibly even identical with the genotype, *S. altivagus* Ad. Lutz. We have seen two females of *S. altivagus*, from Brazil. The genus appears to be close to *Selasoma*, though readily separated by the characters given in the key. It differs from *Stibasoma*, which it resembles superficially, in the short antennal tooth. *S. lutzi* was omitted from Kröber's Catalogue of Neotropical Tabanidæ (1934).

47. **Selasoma tibiale** (Fabricius). Synonym: *Tabanus tibialis* Fabricius, 1805.

Meta: Villavicencio (M. Bates. — Determined by G. Fairchild). — Not seen by us from Colombia.

*48. **Bolbodimyia bicolor** Bigot, 1892. Synonym: *Atylotus erythrocephalus* Bigot, 1892.

Boyacá: Muzo (J. Bequaert). — Meta: Restrepo (J. Bequaert); Retiro near Villavicencio (E. Osorno); Villavicencio (M. Bates. — Determined by G. Fairchild).

This species is extremely variable in color in the same locality. It may be completely black, with a black beard and black hairs on the pleura; or have the under side of the body, the entire head, most of the antennæ and tibiæ reddish, the beard and hairs on the pleura being also bright red. Some specimens are intermediate between these two extremes.

Dichelacera Macquart

We follow G. Fairchild (1943*a*) in subordinating *Catachlorops* and *Psalidia* as subgenera to *Dichelacera*.

Psalidia Enderlein (1922) has as type, by original designation, *Tabanus furcatus* Wiedemann, 1828. This group was originally proposed, as a genus, for Neotropical Tabaninæ with a long, finger-shaped basal process on the third antennal segment and the first posterior cell closed and stalked before the margin of the wing. In the more complete diagnosis of 1925, Enderlein states that the eyes are bare. The closed or open first posterior cell is not a character of generic value in Tabaninæ. Only species with the subepaulet bare or with a few macrotrichia only should be included.

KEY TO SUBGENERA

1. Labella large, about half the length of the proboscis, mostly soft and pollinose, but with a small, shiny, sclerotized area near the base Subgenus *Catachlorops*.
   Labella small, hardly one-third of the length of the proboscis, mostly shiny and sclerotized .... 2.
2. Frons narrow; callus not as wide as frons. Thorax and abdomen without transverse markings. Species generally 15 mm. or longer .... Subgenus *Psalidia*.
   Frons moderately to very broad; callus as wide as frons. Thorax and abdomen with prominent transverse markings. Species generally less than 12 mm. long .... Subgenus *Dichelacera*, proper.

*49. **Dichelacera (Dichelacera) analis** Hine, 1920. Synonym: *Dichelacera costaricensis* Kröber, 1931*g*.

Chocó: El Valle, Utría (J. Boshell. — Determined by G. Fairchild); Andagoya (F. Otoya. — Determined by G. Fairchild); Condoto, one of the type localities of *D. costaricensis*. — Valle del Cauca: Puerto Merizalde, Río Naya (S. Renjifo).

*50. **Dichelacera (Dichelacera) marginata** Macquart, 1847.

Chocó: Lloró (S. Renjifo); Río Cabi near Quibdó (S. Renjifo); Andagoya (D. Augustine; F. Otoya). — Meta: Villavicencio (M. Bates. — Determined by G. Fairchild). — Santander Sur: Jazmín (recorded by Dunn, 1929). — Valle del Cauca: Quebrada San Joaquin near Buenaventura (S. Renjifo).

*51. **Dichelacera (Dichelacera) regina** Fairchild, 1940.

Cauca: Río Micay (S. Renjifo). — Chocó: Istmina (S. Renjifo); Río Nimiquía (E. Osorno and J. Boshell). — Meta: Restrepo (J. Bequaert). — Valle del Cauca: Río Anchicaya, at Kilom. 87 on road from Cali to Buenaventura (S. Renjifo); Puerto Merizalde, Río Naya (S. Renjifo); Veneral, Río Yurumanguí (S. Renjifo).

Dichelacera scapularis Macquart (1847) was recorded by Dunn (1929) from La Dorada, Caldas. The identification appears to be open to question, as this species is known with certainty only from Mexico and the Republic of Honduras.

*52. **Dichelacera (Dichelacera) submarginata** Ad. Lutz, 1915.

Meta: Villavicencio (M. Bates). — Putumayo: La Tagua (Rómulo Patiño).

53. **Dichelacera (Dichelacera) rufipennis** (Macquart). Synonym: *Tabanus rufipennis* Macquart, 1838.

This species was originally described from Brazil. In 1845, Macquart referred to it a female from New Grenada, which may have meant Colombia. Whether this specimen was cospecific with the type seems doubtful. — Not seen by us.

54. **Dichelacera (?Catachlorops) nigripalpis** (Macquart). Synonym: *Tabanus nigripalpis* Macquart, 1845.

This species was originally described without definite locality from "the temperate regions of New Grenada," which may have meant Colombia. The description is rather vague as to the shape of the antenna, the third segment having a "pointe assez forte." Kröber (1931), who never saw it, placed it tentatively in *Catachlorops*. — Not seen by us.

*55. **Dichelacera (Catachlorops) testacea** Macquart, 1846.

Meta: Restrepo (J. Bequaert); Villavicencio (M. Bates). — Vaupés: between San José de Guaviare and Calamar (A. Gast). — Originally described from Colombia, without more definite locality.

56. **Dichelacera (?Catachlorops) quadrimaculata** (Macquart). Synonyms: *Tabanus quadrimaculatus* Macquart, 1845; *Tabanus pœcilopterus* Schiner, 1868.

T. quadrimaculatus was originally described without definite locality from "New Grenada," which may have meant Colombia. — Not seen by us.

*57. **Dichelacera (Catachlorops) rufescens** (Fabricius). Synonym: *Tabanus rufescens* Fabricius, 1805.

Magdalena: Vista Nieve, Sierra Nevada de Santa Marta (H. Viereck).

*58. **Dichelacera (Catachlorops) transposita** Walker, 1854.

Colima: La Brea (S. Renjifo). — Valle del Cauca: Puerto Merizalde, Río Naya (S. Renjifo). — This species was originally described from the "West Coast of America," which may possibly have been in Colombia.

*59. **Dichelacera (Psalidia) vespertina,** new name. Synonym: *Tabanus elongatus* Macquart, 1846; not of Wiedemann, 1828.

Chocó: Río Nimiquía (E. Osorno and J. Boshell). — Cundinamarca: Bogotá (B. Guevara. — This locality needs to be confirmed). — Meta: Villavicencio (G. Fairchild); Restrepo (J. Bequaert). — Valle del Cauca: La Carmelita, Río Frío (S.

Renjifo). — The species was originally described by Macquart from the temperate regions of "New Grenada," which may have meant Colombia.

*60. **Dichelacera (Psalidia) fulminea** (Hine). Synonyms: *Tabanus fulmineus* Hine, 1920; *Tabanus festivus* Hine, 1920, not of Wiedemann, 1828; *Psalidia ocellata* Enderlein, 1925; possibly also *Bellardia furcata* Bigot, 1892 (described without locality), which name is antedated in *Dichelacera* by *Dichelacera (Psalidia) furcata* (Wiedemann, 1828).

Boyacá: Muzo, the type locality of *Psalidia ocellata* (also collected by J. Bequaert and by A. Gast). — Enderlein's additional locality "Bogotá" probably was only the place from which the specimen was shipped to Europe.

61. **Dichelacera (Psalidia) cinnamomea** (Schiner). Synonyms: *Tabanus cinnamomeus* Schiner, 1868; and, according to Kröber (1931), *Chelommia fibulata* Enderlein, 1922 and 1925. Schiner's specific name is not duplicated by the earlier *Tabanus cinnamoneus* Doleschall, 1858, which is spelled otherwise.

Enderlein's types of *C. fibulata* came from Colombia: Guayabal (Valle del Cauca); Cartago (Valle del Cauca); and Alto do Muelas (?error for Alto de las Mulas; not located). — Not seen by us.

62. **Dichelacera (?Psalidia) peruviana** (Macquart). Synonym: *Tabanus peruvianus* Macquart, 1848.

Kröber (1931*c*) records this species from Colombia, without more definite locality. — Not seen by us.

Dasychela Enderlein, 1922

(*Dicladocera* Enderlein, 1922; not of Ad. Lutz, 1912)

The generic name *Dicladocera* was first proposed on p. 29 of an anonymous pamphlet published at Rio de Janeiro in 1909, with the title: "Instituto Oswaldo Cruz em Manguinhos, Rio de Janeiro."[1] The author of the name was certainly Ad. Lutz, as he repeated this and other generic names proposed in the pamphlet in his later publications. No characters were mentioned in 1909, but the following seven described species were included: "*D. immaculata* Macquart, *D. furcata* Wiedemann

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[1] Kröber's (1940) statement that "Dr. Lutz established this genus in 1900, in Mem. Inst. Osw. Cruz, p. 29" is erroneous. Kröber's method of determining the genotype by elimination is no longer the accepted procedure.

(*macrodonta* Macquart), *D. potator* Wiedemann, *D. guttipennis* Wiedemann, *D. macula* (*scutellata*) Macquart, *D. luctuosa* Macquart, *D. rufipennis* Macquart." As the genus was not defined in 1909, the rules of nomenclature might be interpreted so as to make the 1909 name a *nomen nudum*, notwithstanding the citation of several described species. The first valid use of *Dicladocera*, according to the prevailing rules, appears to be by Ad. Lutz in 1912 (Comm. Linhas Telegr. Estrat. Matto Grosso Amazonas, Annexo No. 5, Hist. Nat., Zool., Tabanideos, p. 4), when he described the new species *Dicladocera unicolor*. The correct genotype would then be *D. unicolor*, by monotypy, as Bequaert stated in 1924 (Psyche, XXXI, p. 28).

Enderlein in 1922 (Mitt. Zool. Mus. Berlin, X, pt. 2, p. 346) selected as genotype "*D. guttipennis* (Wiedemann, 1828)"= *Tabanus guttipennis* Wiedemann, 1828. Although this species was included by Ad. Lutz in 1909, it was not mentioned by him in 1912, when the generic name was first validly proposed. Unfortunately, from Lutz' description and figure his *D. unicolor* does not appear to be congeneric with *T. guttipennis*, as the eyes are presumably bare and the tooth of the third antennal segment is only moderately long. For this reason we feel impelled to discard *Dicladocera* for the group thus called by Enderlein, Kröber and Fairchild, and to use instead the name *Dasychela* Enderlein, 1922 (Mitt. Zool. Mus. Berlin, X, pt. 2, p. 380; monotypic for *D. limbativena* Enderlein, 1922). This name was dropped by Enderlein in 1925, as he then described *limbativena* as a species of *Dicladocera*.

Dasychela includes here all Neotropical Tabaninæ with normal tibiæ, a bare or almost bare subepaulet (sometimes with a narrow patch of a few macrotrichia near the middle), a long and often finger-shaped upper process near the base of the third antennal segment, and hairy or pubescent eyes (hairs sometimes short, scattered and easily overlooked). Enderlein at first (1922) placed his *Dicladocera* in the key as if the eyes were bare; but he corrected this error later (1925). The eyes are distinctly pubescent in *D. guttipennis*.

Stypochela Enderlein, 1922. This genus was originally proposed for a single species, *Stypochela bogotana* Enderlein, 1922, on the strength of the slender, narrow body and the presence of an appendix to the fork of the third longitudinal vein. These characters are scarcely of even subgeneric value. We should have united *Stypochela* with *Dicladocera*, were it not that Kröber found the type of *S. bogotana* to have only three, instead of four, terminal annuli to the third antennal segment. The eyes are pubescent.

63. **Dasychela perplexa** (Walker). Synonym: *Tabanus perplexus* Walker, 1850.

This species was originally described from Colombia, without more definite locality. Kröber (1940) redescribed the type. — Not seen by us.

*64. **Dasychela macula** (Macquart). Synonyms: *Tabanus macula* Macquart, 1845; *Tabanus auribarbis* Macquart, 1848; *Tabanus argyrophorus* Schiner, 1868; *Tabanus submacula* Walker, 1850.

Magdalena: northwestern Sierra Nevada de Santa Marta (P. Darlington); San Lorenzo Mts. (reported by Kröber, 1940). — Valle del Cauca: La Cumbre (Collector?). — *T. submacula* Walker was originally described from Colombia, without definite locality. Surcouf (1919) recorded *T. auribarbis* from the Valley of the Magdalena River.

Kröber (1940) includes also *Tabanus scutellatus* Macquart (1838) among the synonyms of *D. macula*. Specimens from southern Brazil, before us, agree perfectly with Macquart's description, but are very distinct from *D. macula*. Among other points, the eyes are completely bare, which places the species in the subgenus *Psalidia*. Moreover, what Ad. Lutz reported from southern Brazil as *D. macula*, appears to have been mostly, if not always, *D. scutellata* (Macquart).

65. **Dasychela acheronitens** (Kröber). Synonym: *Dicladocera acheronitens* Kröber, 1931*g*.

The original description was made partly on specimens from Colombia, without more definite locality. — Not seen by us from Colombia.

66. **Dasychela limbativena** Enderlein, 1922. Synonym: *Dicladocera limbativena* Enderlein, 1925.

The type locality of this species is given as "Colombia: Bogotá, Guayabal." This Guayabal is most probably in Valle del Cauca. Bogotá appears to be in this case merely the locality from which the specimen was shipped to Europe. — Not seen by us from Colombia; but we studied a female from Ecuador.

67. **Dasychela steinheili** (Enderlein). Synonym: *Dicladocera steinheili* Enderlein, 1925.

The type locality of this species is given as "Colombia: Bogotá, Quindin." This was evidently a misspelling of Quindío, a district in the northeastern corner of Valle del Cauca and the adjoining sections of Caldas and Tolima. — Not seen by us.

*68. **Dasychela basirufa** (Walker). Synonyms: *Tabanus basirufus* Walker, 1850; *Dicladocera pallidetibia* Kröber, 1940.

Cundinamarca: Guasca (E. A. Chapin). — Originally described from Colombia, without more definite locality. The hairy eyes and long antennal tooth, curved downward, refer the species to *Dasychela*.

*69. **Dasychela caloptera** (Schiner). Synonym: *Tabanus calopterus* Schiner, 1868.

Magdalena: Cincinnati, Santa Marta (W. M. Mann). — Kröber (1940) recorded this species from Colombia, without definite locality.

70. **Dasychela** (**Stypochela**) **bogotana** (Enderlein). Synonym: *Stypochela bogotana* Enderlein, 1922 and 1925.

This species was originally described with the following localities: "Columbien, Bogotá, Cartago und Las Pavas — Piodsaa Molar." Both Cartago and Las Pavas are in Valle del Cauca; the locality Bogotá is probably erroneous, being merely the place from which the specimens were shipped to Europe. — Not seen by us.

Alliomma Borgmeier, 1934

Alliomma was proposed by Borgmeier (1934, Rev. de Entomologia, IV, pt. 2, pp. 222, footnote, and 269), with *Ommallia thiemeana* Enderlein as type, for Kröber's *Ommallia* of 1931 (Rev. de Entomologia, I, pt. 3, p. 293). The type of Enderlein's genus *Ommallia* (1923) is *Ommallia viridis* Enderlein, a species not congeneric with *O. thiemeana* and now placed in *Cryptotylus*. The name *Alliomma* should be used for a group of species more closely related to the subgenus *Tabanus*, proper, than to *Dichelacera*. While these species agree with *Dichelacera* and *Dasychela* (= *Dicladocera* of most authors) in the long, finger-shaped extension of the base of the first antennal segment, they differ by the subepaulet completely covered with macrotrichia. The eyes are bare.

*71. **Alliomma macquarti** (Schiner). Synonyms: *Tabanus macquarti* Schiner, 1868; *Tabanus ruber* Macquart, 1845, not of Thunberg, 1827; *Tabanus infuscatipennis* "Macquart" Surcouf, 1919, Mesure Arc Equat. Méridien, X, p. 230; *Tabanus indescriptus* "Schiner" Kröber, 1931*e*; *Gymnochela bigoti* Kröber, 1931, Zoolog. Anzeiger, XCVI, p. 50, fig. 1; not *Tabanus bigoti* Bellardi, 1859.

Boyacá: Muzo (J. Bequaert). — Meta: Restrepo (J. Bequaert; W. H. W. Komp); Villavicencio (J. Bequaert). — Putumayo: Puerto Limón (S. Renjifo). — Vaupés: Mitú (P. Allen).

The complicated synonymy of this species appears to be as follows: (1) Schiner described his *T. macquarti* from a female said to have come from Colombia and his description fits our specimens. He gave both *T. apicalis* Macquart and *T. rubidus* Macquart as doubtful synonyms; but neither of these species were Schiner's *macquarti* in our opinion. (2) Macquart gave Mexico as the locality of his *T. ruber*; but Surcouf (1919) states that the specimen at the Paris Museum, presumably the type of *ruber*, bears two labels one in Macquart's hand "Colombie"; the other "Brésil, Guérin-Méneville." Surcouf redescribed *ruber* from this specimen, for which he also found and published the manuscript name *infuscatipennis*. Our Colombian specimens agree with Surcouf's description. (3) Kröber described "*Gymnochela bigoti*" evidently from Schiner's type of *T. macquarti*, although he says that the specimen came from Venezuela. His description and figures fit the Colombian specimens which we call *macquarti*. Kröber was mistaken, we believe, in referring his specimen to *T. bigoti* Bellardi, which was a substitute name for *Tabanus apicalis* Macquart, 1847 (not of Wiedemann, 1828), Bellardi's description being based on Macquart's type. The true *bigoti* is a *Tabanus* with a short tooth on the third antennal segment, as described by Osten Sacken for the female in 1886 (Biol. Centr. Amer., Dipt., I, p. 48). Osten Sacken was in error, however, when he cited as a synonym of his *bigoti*, *T. macquarti* Schiner, which has a very long antennal tooth. The true *T. bigoti* was correctly recognized by Fairchild (1943*a*, p. 442, figs. 4 and 5). (4) *Tabanus indescriptus* "Schiner" is a manuscript name which Kröber (1931*e*) found with the type of *T. macquarti*.

*72. **Alliomma thiemeana** (Enderlein). Synonyms: *Ommallia thiemeana* Enderlein, 1925; *Ommallia interrupta* Enderlein, 1925.

Valle del Cauca: Cali (B. Losada. — U. S. N. M.). — Both *O. thiemeana* and *O. interrupta* were originally described from Colombia, without definite locality ("Cordillera, tierra caliente").

73. **Alliomma brevihamus** (Enderlein). Synonym: *Ommallia brevihamus* Enderlein, 1925.

Originally described from Colombia, without definite locality ("Cordillera, tierra caliente"). Not seen by us.

*74. **Chlorotabanus inanis** (Fabricius). Synonym: *Tabanus inanis* Fabricius, 1787.

Meta: El Caibe (reported by Antunes, 1937); Villavicencio (M. Bates. — Determined by G. Fairchild); Restrepo (J. Bequaert). — Putumayo: Mocoa (S. Renjifo); Río Putumayo, between Itiquilla and Puerto Arana (S. Renjifo); La Tagua (Rómulo Patiño).

*75. **Chlorotabanus mexicanus** (Linnaeus). Synonym: *Tabanus mexicanus* Linnaeus, 1767.

Antioquia: Murindó (reported by Dunn, 1929); Providencia (F. L. Gallego). — Cauca: Río Micay (S. Renjifo). — Chocó: along the Atrato River (reported by Dunn, 1929); Arquía (reported by Dunn, 1929); Andagoya (D. Augustine). — Reported from the Magdalena River by Kröber (1931*f*) and also taken there by M. Hertig.

*76. **Cryptotylus unicolor** (Wiedemann). Synonym: *Tabanus unicolor* Wiedemann, 1828.

Meta: Hacienda Yacuana near Villavicencio (E. Osorno). — Reported from the Magdalena River by Kröber (1932*c*).

77. **Cryptotylus limonus** (Townsend). Synonyms: *Tabanus mexicanus* var. *limonus* Townsend, 1897; *Ommallia viridis* Enderlein, 1925.

Meta: Villavicencio (M. Bates. — Determined by G. Fairchild). — *O. viridis* was originally described from Colombia, without definite locality ("Cordillera, tierra caliente"). — Not seen by us from Colombia.

*78. **Leucotabanus leucaspis** (Wiedemann). Synonym: *Tabanus leucaspis* Wiedemann, 1828.

Boyacá: Guaguaquí (S. Renjifo). — Meta: El Caibe (reported by Antunes, 1937); Río Negro, 20 Kilom. south of Villavicencio (J. Bequaert); Restrepo (J. Bequaert; W. H. W. Komp); Villavicencio (M. Bates. — Determined by G. Fairchild). — Santander Sur: Río Negro (J. V. Acuña). — Valle del Cauca: Hacienda La Carmelita, Río Frío (S. Renjifo). — Vaupés: between San José del Guaviare and Calamar (A. Gast. — Determined by G. Fairchild).

*79. **Leucotabanus flavinotum** (Kröber). Synonyms: *Tabanus nigriflavus* Kröber, 1931, not of Kröber, 1930; *Tabanus flavinotum* Kröber, 1934.

Boyacá: Muzo (J. Bequaert).

80. **Leucotabanus canithorax** Fairchild, 1941. Synonym: *Tabanus albicans* Macquart, 1845, not of Macquart, 1834 or 1838.

Magdalena: Sevilla (reported by Curran, 1928).

Macquart's *T. albicans* of 1845 was based on a male from Colombia, without more definite locality. Kröber (1929) described what he assumed to be the female, also from Colombia, without more definite locality. Fairchild (1941) doubts whether this female was actually cospecific with Macquart's male. — Not seen by us from Colombia.

*81*a*. **Hybomitra quadripunctata** (Fabricius). Synonyms: *Tabanus quadripunctatus* Fabricius, 1805. *Tabanus punctipennis* Macquart, 1838; *Tabanus nigropunctatus* Bellardi, 1859.

Antioquia: Medellín, 1538 m. (E. A. Chapin; H. Daniel; F. L. Gallego). — Meta: Villavicencio (M. Bates. — Determined by G. Fairchild). — Valle del Cauca: Tres Esquinas, Habana, Buga (S. Renjifo); Buenaventura.

*81*b*. **Hybomitra quadripunctata** var. **amabilis** Walker. Synonyms: *Tabanus amabilis* Walker, 1848; *Tabanus maculipennis* Macquart, 1834 and 1845, not of Wiedemann, 1828; *Hypopelma quadripunctata* aberr. *dasyphyrtina* Enderlein, 1925.

Meta: Restrepo (J. Bequaert; also reported by Antunes, 1937). — Enderlein (1925) reported the var. *amabilis* under the name *Dasyphyrta maculipennis*, from Colombia, without definite locality ("Cordillera, tierra templada").

82. **Hybomitra** (?) **bogotana** (Enderlein). Synonym: *Dasyommia bogotana* Enderlein, 1925.

Cundinamarca: Bogotá (Steinheil), the type locality of the species. As the type lacked the third antennal segment, the correct place of this species remains obscure. — Not seen by us.

*83. **Hybomitra minos** (Schiner). Synonym: *Tabanus minos* Schiner, 1868.

Santander: Paramo del Almorzadero, 14,000 ft., one male (A. Gast).

The male which we refer to *H. minos* agrees with Schiner's (1868) and Kröber's (1940) descriptions of the female, except for purely sexual differences.

*84. **Hybomitra indiorum,** new name. Synonym: *Tabanus rufiventris* Macquart, 1845; not of Fabricius, 1805, nor of Macquart, 1838.

Caquetá: Florencia (Rómulo Patiño).

This species was originally described as from Sante Fé de Bogotá. We believe we have recognized it in a series of females from Florencia, which agree well with the description. There are a few short hairs on the eyes and the frontal callus is of the elongate, broad type found in the other species of *Hybomitra*.

*85. **Hybomitra rubiginipennis** (Macquart). Synonyms: *Tabanus rubiginipennis* Macquart, 1845; *Tabanus adustus* Walker, 1850.

Meta: Restrepo (J. Bequaert).—*H. rubiginipennis* was originally described from the temperate regions of "New Grenada," which may have meant Colombia. *T. adustus* was described from Colombia, without more definite locality. Kröber (1940), who synonymized these two species, included *rubiginipennis* in *Dicladocera*; but both he and Macquart figure the third antennal segment correctly with a short, though strong tooth. The eyes bear a few scattered short hairs, easily overlooked, which explains why neither Macquart nor Walker mentioned them.

*86. **Phæotabanus (Aegialomyia) cinereus** (Wiedemann). Synonym: *Tabanus cinereus* Wiedemann, 1821.

Meta: Villavicencio, on a sandy river beach (G. Fairchild).

According to Dr. Fairchild, the eyes of the female are in life purple with two green cross-bands. The median purple streak is darker than the upper and lower corners.

The species seems to fit best in *Aegialomyia* Philip, a group which appears to be only subgenerically distinct from *Phæotabanus*.

*87. **Brachytabanus longipennis** (Kröber). Synonym: *Stenotabanus longipennis* Kröber, 1930*a*.

Boyacá: Muzo (J. Bequaert). — Meta: Villavicencio (J. Bequaert). — Santander Sur: Bocas del Rosario, Río Magdalena, male taken at light (J. Bequaert). — Also taken by E. Osorno on the Upper Magdalena River, exact locality unknown.

*88. **Stenotabanus obscurus** Kröber, 1930*a*.

Putumayo: Urcusique (S. Renjifo).

In life the eyes of the female are dark purple with two green cross-bands.

*89. **Stenotabanus maculifrons** (Hine). Synonym: *Tabanus maculifrons* Hine, 1907.

Meta: Restrepo (reported by Antunes, 1937); Río Caney near Restrepo (J. Bequaert); Villavicencio (M. Bates. — Determined by G. Fairchild). — Also taken by E. Osorno on the Upper Magdalena River, exact locality unknown.

*90. **Stenotabanus cajennensis** (Fabricius). Synonym: *Tabanus cajennensis* Fabricius, 1787.

Meta: region of Río Negro, south of Villavicencio (J. Bequaert). — Tolima: between Mediación and Ibagué, 1500 to 2500 m. (reported by Therese von Bayern, 1903. — The occurrence of this lowland species at such high altitude appears somewhat open to question).

*91. **Stenotabanus pequeniensis** Fairchild, 1942*e*.

Meta: Restrepo (J. Bequaert), locality of some of the paratypes.

92. **Stenotabanus** (?) **detersus** (Walker). Synonym: *Tabanus detersus* Walker, 1850.

Originally described from Colombia, without more definite locality. Kröber (1930*e*) redescribed the type, but could not decide whether to place it in *Stenotabanus* or in *Macrocormus*. — Not seen by us.

*93. **Agelanius columbianus** (Enderlein). Synonyms: *Archiplatius columbianus* Enderlein, 1925; *Dasybasis columbiana* Stone, 1944.

Cundinamarca: Monserrate near Bogotá, 3,000 m. (E. Osorno), male and female. — A female at the U. S. Nat. Mus. is merely labelled "Colombia." — Originally described from Colombia, without definite locality: "Cordillera, tierra templada."

*94. **Agelanius osornoi** J. Bequaert, 1947. (See appendix to this paper).

Cundinamarca: Monserrate near Bogotá, 3,000 m. (Hernando Osorno), type locality of the species.

Tabanus Linnaeus

KEY TO SUBGENERA

1. Abdomen with one, two, or three pale longitudinal stripes or rows of contiguous or nearly contiguous spots. Wings hyaline or smoky, or faintly clouded along the veins. Eyes of female bare, green with two or three dark cross-bands in life; of male bare or hairy, with or without an area of larger facets. Subgenus *Neotabanus*.
   Abdomen usually without longitudinal stripes or rows of spots; if with rows of spots, the eyes of female unbanded or with only one band in life .... 2.
2. Disk of scutellum with a conspicuous spot of black pubescence, more or less surrounded by a ring of white hairs. Eyes of female unbanded. Subgenus *Lophotabanus*.
   No spot of black pubescence on scutellum; sometimes a small prescutellar patch of black hairs .... 3.
3. Wings prominently clouded or spotted with brown, seldom mostly black, as a rule with hyaline areas about the cross-veins. Frons usually very narrow, with ridge-like callus. Eyes of female unbanded .... Subgenus *Philipotabanus*.
   Wings hyaline, smoky, entirely black, or spotted at the cross-veins; in doubtful cases frons otherwise .... 4.
4. Relatively slender species. Third antennal segment not crescent-shaped, only slightly angular near the upper base. Upper branch of third longitudinal vein with a very long appendix ....Subgenus *Macrocormus*.
   Stout species. Third antennal segment crescent-shaped, with a strong tooth near the upper base. Upper branch of third longitudinal vein normally without appendix. .... Subgenus *Tabanus*, proper.

*95*a*. **Tabanus (Neotabanus) lineola** var. **carneus** Bellardi. Synonyms: *Tabanus carneus* Bellardi, 1859; *Tabanus appendiculatus* Hine, 1906.

Amazonas: Caucaya (S. Renjifo); Tarapacá (S. Renjifo). — Antioquia: near Porcecito, Río Porce (N. Weber); El Dos, Turbo (S. Renjifo); Micuro, Río Leon (S. Renjifo); Puerto Berrio (reported by Dunn, 1929). — Atlántico: Puerto Colombia (J. Bequaert); Calamar (J. Bequaert); Barranquilla (reported by Kröber, 1933*b*); Sabanilla (reported by Kröber,

1933*b*). — Boyacá: Muzo (J. Bequaert). — Chocó: Andagoya (D. Augustine); Sautatá (S. Renjifo). — Magdalena: Sevilla (G. Salt); Río Frío (G. Salt). — Meta: Restrepo (J. Bequaert); Villavicencio (J. Bequaert; M. Bates). — Putumayo: La Tagua (Rómulo Patiño). — Santander Sur: Bocas del Rosario (J. Bequaert); Puerto Wilches (reported by Dunn, 1929); Barranca (reported by Dunn, 1929); Barrancabermeja (J. Bequaert; also reported by Dunn, 1929). — Valle del Cauca: Hacienda La Brisa, Ginebra (S. Renjifo); Ginebra (S. Renjifo); Hacienda El Tablazo, Tuluá (S. Renjifo); Tres Esquinas, Habana, Buga (S. Renjifo); Guayabal, Río Cajambre (S. Renjifo); Hacienda La Carmelita, Río Frío (S. Renjifo); Hormiguero (H. F. Schwarz).

*95*b*. **Tabanus (Neotabanus) lineola** var. **stenocephalus** Hine. Synonym: *Tabanus stenocephalus* Hine, 1906.

Meta: Villavicencio (M. Bates).

*95*c*. **Tabanus (Neotabanus) lineola** var. **plangens** Walker. Synonym: *Tabanus plangens* Walker, 1854.

Amazonas: Tarapacá (S. Renjifo). — Boyacá: Casanare (L. Patiño-Camargo). — Chocó: Río Atrato (reported by Fairchild, 1942); north of the mouth of the Río Arquía, Río Atrato (reported by Kröber, 1933*b*). — Meta: Restrepo (J. Bequaert); Villavicencio (J. Bequaert). — Putumayo: San Pedro (S. Renjifo); Puerto Limón (S. Renjifo); La Tagua (Rómulo Patiño). — Valle del Cauca: Buenaventura (N. Weber). — Vaupés: between San José de Guaviare and Calamar (A. Gast. — Determined by G. Fairchild).

*96. **Tabanus (Neotabanus) hookeri** Knab, 1915.

Magdalena: Santa Marta (J. H. Egbert). — Valle del Cauca: Cali, 3,260 ft. (H. F. Schwarz. — Reported by J. Bequaert, 1940).

*97. **Tabanus (Neotabanus) fumatipennis** Kröber, 1933*b*.

Antioquia: El Dos, Turbo (S. Renjifo). — Meta: Villavicencio (M. Bates. — Determined by G. Fairchild). — Putumayo: Mocoa (S. Renjifo); San Pedro (S. Renjifo). — Valle del Cauca: Hacienda La Carmelita, Río Frío (S. Renjifo); Guayabal, Río Cajambre (S. Renjifo).

*98. **Tabanus (Neotabanus) restrepoensis** Fairchild, 1942.

Meta: Restrepo (J. Bequaert), the type locality of the species; Villavicencio (M. Bates. — Determined by G. Fairchild).

99. **Tabanus (Neotabanus) lucidecallosus** Fairchild, 1942.

Meta: Restrepo (determined by G. Fairchild). — Not seen by us from Colombia.

*100. **Tabanus (Neotabanus) cicur** Fairchild, 1942.

Meta: Restrepo (J. Bequaert; P. C. A. Antunes), the type locality of the species; La Unión, 12 Kilom. east of Restrepo (J. Bequaert).

*101. **Tabanus (Neotabanus) amplifrons** Kröber, 1933*b*.

Meta: Villavicencio (M. Bates. — Determined by G. Fairchild); Restrepo (J. Bequaert). — Santander Sur: Puerto Olaya (J. Bequaert). — Vaupés: between San José del Guaviare and Calamar (A. Gast. — Determined by G. Fairchild).

*102. **Tabanus (Neotabanus) columbus** Fairchild, 1942.

Magdalena: Ciénaga (G. Salt). — Vaupés: between San José del Guaviare and Calamar (A. Gast. — Determined by G. Fairchild).

*103. **Tabanus (Neotabanus) stuppeus** Fairchild, 1942.

Meta: La Unión, 12 Kilom. east of Restrepo (J. Bequaert).

The foregoing two species are very poorly defined and we are inclined to regard them as one and the same. Our specimens were compared with the types.

*104. **Tabanus (Neotabanus) angustivitta** Kröber. Synonym: *Tabanus dorsiger* var. *angustivitta* Kröber, 1929.

Meta: Villavicencio (M. Bates. — Determined by G. Fairchild); Restrepo (J. Bequaert, reported by G. Fairchild, 1942). — Valle del Cauca: Hacienda San José, Bugalagrande (S. Renjifo). — This species was reported from Colombia as *T. truquii* by J. Bequaert, 1940.

*105. **Tabanus (Neotabanus) comitans** Wiedemann, 1828.

Meta: Restrepo (J. Bequaert).

106. **Tabanus (Neotabanus) colombensis** Macquart, 1845.

This species was originally described from Colombia, without definite locality. The abdomen was said to have two longitudinal yellowish-white stripes. — Not seen by us.[1]

*107. **Tabanus (Tabanus) lividus** Walker, 1848. Synonym: *Tabanus viduus* Walker, 1850.

Amazonas: Leticia (S. Renjifo). — Boyacá: Muzo (J. Bequaert). — Meta: Villavicencio (M. Bates); Restrepo (J. Bequaert).

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[1] The *Tabanus trilineatus*, recorded by Curran (1928) from Sevilla (Magdalena) was no doubt one of the species of *Neotabanus* listed in this paper; but it is impossible to decide which species, without seeing the specimen.

*108. **Tabanus (Tabanus) alboater** Walker, 1850.

Vaupés: Mitú (P. Allen); between San José del Guaviare and Calamar (A. Gast).

*109. **Tabanus (Tabanus) discus** Wiedemann, 1828.

Vaupés: Mitú (P. Allen).

*110. **Tabanus (Tabanus) olivaceiventris** Macquart, 1847. Synonyms: *Tabanus imponens* Walker, 1857; *Atylotus pulverulentus* Bigot, 1892; *Tabanus coriarius* "Schiner" Kröber, 1929.

Magdalena: Río Frío (G. Salt). — We have seen a male of this species taken in Colombia, unfortunately without more definite locality. It is almost exactly like the female.

*111. **Tabanus (Tabanus) importunus** Wiedemann, 1828; not of Macquart, 1847.

Magdalena: Aracataca (P. J. Darlington). — Meta: Restrepo (J. Bequaert); El Caibe, near Restrepo (reported by Antunes, 1937).

*112. **Tabanus (Tabanus) ferrifer** Walker, 1850. Synonym: *Tabanus druyvesteijni* Szilády, 1926.

Antioquia: Medellín Valley (F. L. Gallego). — Atlántico: Barranquilla (reported by Dunn, 1929). — Magdalena: Santa Marta (J. H. Egbert); Sevilla (G. Salt). — Meta: Restrepo (J. Bequaert). — Valle del Cauca: Hacienda La María, Buga (S. Renjifo).

*113. **Tabanus (? Tabanus) hirtitibia** Walker, 1850.

Caquetá: Florencia (Rómulo Patiño). — Originally described from Colombia, without definite locality.

Although our specimen agrees well with Walker's description, it lacks the antennæ, which were also broken off in the type. It is possible that the third segment has a long, finger-shaped tooth, in which case the species may have to be transferred to *Alliomma*.

114. **Tabanus (? Tabanus) flavifacies** Macquart, 1845.

Originally described from Colombia, without more definite locality. The abdomen is described as black, with three rows of white triangular spots. The size (10½ French lines = 23.7 mm.) is rather large for a *Neotabanus*, and it was more likely a true *Tabanus*. — Not seen by us.

115. **Tabanus (Lophotabanus) pseudoculus** Fairchild, 1942.

Boyacá (? or Caldas): Neira (L. Murillo. — Determined by G. Fairchild). — Not seen by us from Colombia.

*116. **Tabanus (Lophotabanus) xipe** Kröber, 1934. Synonym: *Lophotabanus surinamensis* Kröber, 1929; not *Tabanus surinamensis* Macquart, 1838.

Chocó: Andagoya (A. Gast). — Meta: Restrepo (J. Bequaert; also reported by Antunes, 1937); Villavicencio (M. Bates).

117. **Tabanus (Lophotabanus) oculus** Walker, 1848. Synonyms: *Tabanus albo-notatus* Bellardi, 1859; *Tabanus oculatus* Dunn, 1929 (misspelling of *oculus*).

Santander Sur: Jazmín, between Puerto Wilches and Bucaramanga (reported by Dunn, 1929). — *T. oculus* was originally described in part from Colombia without more definite locality. — Not seen by us from Colombia.

After studying many specimens of this group from Yucatan, Honduras, Guatemala, Panama, Colombia, Venezuela, Trinidad, and Brazil, we have come to the conclusion that *T. albocirculus* Hine and *T. xipe* Kröber will eventually be synonymized with *T. oculus*. *T. oculus* is used at present for specimens with the first posterior cell closed and stalked before the margin, a character which is not always of specific value in *Tabanus*.[1] Of the others, with open first posterior cell, the larger specimens are placed in *xipe*, while the smaller ones become *albocirculus*, a procedure which leaves the medium-sized ones in doubt. Specimens with the first posterior cell closed just at or near the margin, or barely open, must also be placed arbitrarily.

*118. **Tabanus (Lophotabanus) pruinicorpus** Kröber, 1934. Synonym: *Lophotabanus pruinosus* Kröber, 1929; not *Tabanus pruinosus* Bigot, 1892.

Magdalena: Río Frío (G. Salt); Sevilla (G. Salt). — Kröber originally described his *L. pruinosus* from Bolivia and Colombia (supposedly from Bogotá, a locality which is perhaps open to question).

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[1] In the present paper the subgenus *Lophotabanus* Szilády (1926) includes *Bellardia* Rondani (1864) (not of Robineau-Desvoidy, 1863), a name later changed to *Bellaria* Strand (1928).

*119. **Tabanus (Macrocormus) sorbillans** Wiedemann, 1828.

Boyacá: Casanare (L. Patiño). — Meta: Restrepo (J. Bequaert).

120. **Tabanus (Macrocormus) obscurigaster** Kröber, 1934. Synonym: *Macrocornus obscuriventris* Kröber, 1930; not *Tabanus obscuriventris* Kröber, 1929.

Chocó: Condoto, type locality of the species. — Not seen by us.

121. **Tabanus (Philipotabanus) fascipennis** Macquart, 1845.

Originally described from Brazil and "New Grenada," the latter possibly meaning Colombia. Kröber (1930*f*) reported it from Bogotá, but it seems rather doubtful that it was actually taken there. — Not seen by us.

*122. **Tabanus (Philipotabanus) multiguttatus** Kröber, 1930*f*.

Cundinamarca: Bogotá, the type locality. — Magdalena: Sierra Lorenzo, at 8,500 ft. (H. Viereck). — Kröber gave also "New Grenada" and Ecuador as additional localities and placed the species in *Phæotabanus*.

*123. **Tabanus (Philipotabanus) magnificus** Kröber, 1934. Synonym: *Phæotabanus formosus* Kröber, 1930*f*; not *Tabanus formosus* Walker, 1848.

Cauca: Río Micay (S. Renjifo). — Chocó: Istmina (S. Renjifo); Andagoya (D. Augustine); Río Cabí near Quibdó (S. Renjifo). — Valle del Cauca: Kilom. 87 on road from Cali to Buenaventura, at Río Anchicayá (S. Renjifo); Veneral, Río Yurumanguí (S. Renjifo); Puerto Merizalde, Río Naya (S. Renjifo); Quebrada San Joaquín near Buenaventura (S. Renjifo); Condoto (reported by Kröber, 1930*f*, as one of the type localities of his *P. formosus*); Utría (J. Boshell. — Determined by G. Fairchild); Río Nimiquía (J. Boshell. — Determined by G. Fairchild).

124. **Tabanus (?Philipotabanus) criton** Kröber, 1934. Synonym: *Phæotabanus columbianus* Kröber, 1931*f*; not *Archiplatius columbianus* Enderlein, 1925, now placed in *Tabanus*.

Cundinamarca: Fusugasuga, the type locality. — Not seen by us.

125. **Tabanus (?subgenus) simplex** Walker, 1850.

This species was originally described from Colombia, without definite locality. Kröber (1934) placed it doubtfully as a synonym of *Tabanus (Lophotabanus) bifloccus* Hine, of Cuba. This appears improbable, particularly as Walker did not mention a black spot on the scutellum. — Not seen by us.

Walker (1848) referred doubtfully to the North American *Tabanus lasiophthalmus* Macquart, a specimen collected in Colombia by Goudot. This identification was certainly erroneous and probably based on a specimen of *T. quadripunctatus* Fabricius.

*126. **Diachlorus curvipes** (Fabricius). Synonym: *Hæmatopota curvipes* Fabricius, 1805.

Boyacá: Muzo (J. Bequaert; reported by Bequaert, 1944). — Valle del Cauca: Veneral, Río Yurumanguí (S. Renjifo).

Kröber (1928) reports *Diachlorus ferrugatus* (Fabricius) from Colombia, without definite locality; but this is certainly due to some error.

127. **Acanthocera albomarginata** (Kröber). Synonym: *Spheciogaster albomarginata* Kröber, 1930.

Chocó: Condoto, the type locality. — Not seen by us.

*128. **Acanthocera formosa** Kröber, 1930*d*.

Meta: Restrepo (J. Bequaert. — Reported also by G. Fairchild, 1939).

*129. **Acanthocera trigonifera** Schiner, 1868.

Cundinamarca: Bogotá (reported by Kröber, 1928). — Magdalena: Santa Marta (F. L. Gallego). — The occurrence of this species near Bogotá needs to be confirmed.

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APPENDIX: A NEW *Agelanius* FROM COLOMBIA

BY JOSEPH C. BEQUAERT

Agelanius osornoi, new species

Female. — Medium-sized, black. Frons of medium width, with a large dirty-yellowish basal callus and a velvety-black median spot. Dorsum of thorax with grayish-white longitudinal stripes, of abdomen with a median row of white triangles and lateral transverse white markings. Legs black with mostly pale tibiæ. Wing with a characteristic pattern of blackish spots.

Head transverse, about twice as wide as high in front view, black, mostly covered with grayish-white pollinosity, which is more brownish at level of antennæ. Lower half of face, jowls and outer orbits with long white hairs, forming a conspicuous beard; upper part of face and subcallus with shorter hairs, mixed black and white. Frons about two and one-half times as long as wide at the subcallus, slightly narrowed toward vertex;

basal callus shiny, dirty-yellowish, touching the inner orbits, nearly twice as wide as high, rather abruptly extended upward into a median broad line, which is triangularly widened at the base and reaches to about mid-length of frons; middle third of frons with a large, dull, cordiform spot of velvety-black pollinosity, the broader lower end notched and divided by the smooth extension of the basal callus, the narrowed upper end jagged; remainder of frons and vertex gray pollinose, the velvety spot broadly separated from inner orbits; vertex flat, with a small brownish-pollinose median area; frons with many erect, black hairs, even on the shiny callus. Proboscis short, thick, with large, soft labella. (Antennæ and palpi broken off.) Eyes densely covered with erect grayish hairs. Thorax black, mostly covered with ashy-gray pollinosity, except dorsally over four broad, blackish, longitudinal stripes; of the five grayish-white stripes thus produced, one on each side is very broad and divided posteriorly (above the wing base) by a short blackish streak; three in the middle are much narrower; the median one linear, slightly widened behind where it stops at the posterior third; the two admedian ones reaching the scutellum where they unite with the lateral stripe on each side, but broadly interrupted beyond mid-length of the dorsum; scutellum mostly with blackish pollinosity, the hind margin broadly gray pollinose. Hairs of thorax long, dense and white beneath, dorsally long, sparse, mostly black with a mixture of white particularly near the sides and at the hind margin of the scutellum. Abdomen: integument black, with indefinite slightly brownish areas at the sides of the first tergite; ventrally almost wholly grayish pollinose, dorsally with dull, velvety-black pollinosity on which stand out conspicuous white pollinose markings as follows: a median triangle on the hind margin of tergites 2 to 6, largest on 3 and 4 where they are about as high as wide and reach the anterior margin of the tergite, slightly smaller on 2 and 5 where they occupy half or less of the length of the tergite (triangle of tergite 2 wider than long), very small on 6; a narrow streak at hind margin on each side of tergites 2 to 6 (widest on 2) extending to near the median triangle, from which it is, however, sharply divided; in addition a similar, but broader streak on each side at anterior margin of tergite 2, leaving about the median third free and not connected on the sides with the streak of the hind margin; venter with long, white hairs; tergites with shorter, mostly black hairs, except on the pale areas where some of the hairs are silvery-white, particularly on the median triangles. Legs black, grayish pollinose, with long, grayish-white hairs except over the dark portions of tibiæ and on tarsi, where they are black; tibiæ of normal shape, pale dirty-yellowish over basal two-thirds to three-fourths, which bear silvery-white hairs. Wing without appendix at fork of third longitudinal vein; all posterior cells open at margin; nearly hyaline with conspicuous blackish spots as follows: medium-sized spot at base of first submarginal cell, extending over base of first posterior cell, extreme apex of first basal cell and slightly into discal cell; spot at lower apex of second basal cell, more extended over base of fourth and fifth posterior cells and less so into discal cell; fairly large area around cross-vein at apex of discal cell, from the first to the fourth posterior cells; spot below stigma on second longitudinal vein; small cloudy blotches before the tips of all longitudinal veins, some weaker than others; stigma blackish; squamæ clouded; veins black; halteres blackish; subepaulet bare.

Length, 11.5 mm.; of wing, 9 mm.

Colombia: Monserrate near Bogotá, Dept. Cundinamarca, at about 3,000 m. above sea-level (Hernando Osorno Collector); holotype at Mus. Comp. Zool. (No. 27634).

A. osornoi is related to several species of *Agelanius* from the Andes of South America, such as *A. excelsus* (Surcouf), *A. montium* (Surcouf) and *A. columbianus* (Enderlein). It is, however, readily separated from these and other species known to me by the conspicuous pattern of white markings on the abdomen, the arrangement of spots and clouds in the wing, as well as the large velvety-pollinose spot on the middle of the frons. For this reason I am describing it as new, notwithstanding the lack of antennæ.

A NEW RECORD OF OXYAGRION (ZYGOPTERA) FROM NORTH AMERICA

By Kenneth A. Christiansen
Boston, Mass.

While examining a tray of unidentified damsel flies at the Harvard Museum of Comparative Zoology, I discovered a small male cœnagrionid of unusual coloration labelled "June 9, Beltsville, Maryland." The specimen had been collected by Mr. Nathan Banks on one of two trips in 1915 and 1916. I identified the insect as *Oxyagrion peterseni* Ris, and this identification was later confirmed by Dr. P. P. Calvert. On further inquiry Mr. Banks informed me that the damsel fly was captured in an open Sphagnum bog which had formed over a substratum of rock. To my knowledge the only other North American record of this tropical genus is the capture of *Oxyagrion rufulum* in northern California.[1] Needham apparently did not think that this record was sufficient reason for including the genus *Oxyagrion* in his "Handbook of the Dragonflies of North America."

I have compared the Maryland specimen of *O. peterseni* with the two paratypes in the collection of the Harvard Museum with the following results: The Maryland specimen is darker than the paratypes on the thoracic dorsum, and the femora of the former are lined with black whereas the legs of the paratypes are entirely yellow.[2] There are eight matched post-nodal crossveins in the wings of the Maryland specimen and nine in the wings of the paratypes. In all other external features the specimens appear to be identical.

I have as yet no plausible explanation for this northern occurrence of the tropical genus; and further records are necessary to determine whether or not *Oxyagrion* is a true member of the North American odonate fauna.

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[1] Muttkowski's Catalogue of the Odonata of North America, Bull. Wisc. Nat. Hist. Soc. No. 8, p. 53.

[2] These variations are probably due to age as the paratypes appear to be younger than the Maryland specimen.

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